NUS CORPORATION
A Halliburton Company

FINAL DRAFT
PRELIMINARY ASSESSMENT REPORT
CAMPBELL SOUP COMPANY (MARKET STREET)
CAMDEN, NEW JERSEY
PREPARED UNDER

FIELD INVESTIGATION TEAM ACTIVITIES AT UNCONTROLLED HAZARDOUS SUBSTANCES FACILITIES — ZONE I

NUS CORPORATION
SUPERFUND DIVISION

02-8901-04-PA
REV. NO. 0

FINAL DRAFT
PRELIMINARY ASSESSMENT REPORT
CAMPBELL SOUP COMPANY (MARKET STREET)
CAMDEN, NEW JERSEY
PREPARED UNDER

TECHNICAL DIRECTIVE DOCUMENT NO. 02-8901-04
CONTRACT NO. 68-01-7346

FOR THE

ENVIRONMENTAL SERVICES DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

MARCH 6, 1989

NUS CORPORATION
SUPERFUND DIVISION

SUBMITTED BY:

CHARLES LOBUE
PROJECT MANAGER

TAMARA MARQUART
SITE MANAGER

REVIEWED/APPROVED BY:

RONALD M. NAMAN
FIT OFFICE MANAGER

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT

PART I: SITE INFORMATION

1. **Site Name/Alias** Campbell Soup Company (Market Street)
   Street 100 Market Street
   City Camden **State** New Jersey **Zip** 08101
2. **County** Camden **County Code** 007 **Cong. Dist.** 01
3. **EPA ID No.** NJD003951951
4. **Latitude** 39° 56' 52" N **Longitude** 75° 07' 40" W
   USGS Quad. Philadelphia
5. **Owner** Campbell Soup Company **Tel. No.** (609) 964-4000
   Street 100 Market Street
   City Camden **State** New Jersey **Zip** 08101
6. **Operator** Campbell Soup Company **Tel. No.** (609) 964-4000
   Street 100 Market Street
   City Camden **State** New Jersey **Zip** 08101
7. **Type of Ownership**
   ☒ Private ☐ Federal ☐ State
   ☐ County ☐ Municipal ☐ Unknown ☐ Other
8. **Owner/Operator Notification on File**
   ☐ RCRA 3001 **Date** ☐ CERCLA 103c **Date**
   ☒ None ☐ Unknown
9. **Permit Information**

Permit	Permit No.	Date Issued	Expiration Date	Comments
Air	P-20652	Unknown	Unknown	
Air	C-7266	Unknown	Unknown	
NJPDES	0050105	Unknown	Unknown	

10. **Site Status**
    ☒ Active* ☐ Inactive ☐ Unknown
    * Plant No. 1 is an active facility and Plant No. 2 is an inactive facility.
11. **Years of Operation** 1/1/26 to Present (Plant No. 1)
    1/1/26 to Unknown (Plant No. 2)
12. **Identify the types of waste units (e.g., landfill, surface impoundment, piles, stained soil, above- or below-ground tanks or containers, land treatment, etc.) on site. Initiate as many waste unit numbers as needed to identify all waste sources on site.**

    (a) **Waste Management Areas**

Waste Unit No.	Waste Unit Type	Facility Name for Unit
1	Drums	RCRA 90-day waste accumulation
2	Assorted Disposals	

(b) **Other Areas of Concern**

Identify any miscellaneous spills, dumping, etc. on site; describe the materials and identify their locations on site.

Described in Waste Unit No. 2.

13. **Information available from**

Contact Amy Brochu **Agency** U.S. EPA **Tel. No.** (201) 906-6802

Preparer Tamara Marquart **Agency** NUS Corp. Region 2 FIT **Date.** 03/06/89

PART II: WASTE SOURCE INFORMATION

For each of the waste units identified in Part I, complete the following six items.

Waste Unit 1 - Drums, RCRA 90-day waste accumulation

1. **Identify the RCRA permit status, if applicable, and the age of the waste unit.**

   The facility is classified as a generator of hazardous wastes; therefore, a RCRA permit is not required. Hazardous wastes generated are stored on site for less than 90 days. During the off-site reconnaissance conducted by NUS Region 2 FIT, no drums were observed on site.

2. **Describe the location of the waste unit and identify clearly on the site map.**

   The former outdoor drum storage area was located on the eastern edge of Plant No. 2, on the west side of Building 37 on Delaware Ave.

3. **Identify the size or quantity of the waste unit (e.g., area or volume of a landfill or surface impoundment, number and capacity of drums or tanks). Specify the quantity of hazardous substances in the waste unit.**

   At the time of the 1983 RCRA inspection, eighty-two 55-gallon drums were on site. It is unknown if any drums are currently on site.

4. **Identify the physical state(s) of the waste type(s) as disposed of in the waste unit. The physical state(s) should be categorized as follows: solid, powder or fines, sludge, slurry, liquid, or gas.**

   Liquid.

5. **Identify specific hazardous substance(s) known or suspected to be present in the waste unit.**

   Waste solvents were generated from the manufacturing of cans and the cleaning of the equipment with trichloroethane, mineral spirits, and soap. Other wastes reported on site were xylene, butanone, toluene, methylbenzene, methyl isobutyl ketone, butanol, and nitropropane, as well as unknown ignitables.

6. **Describe the containment of the waste unit as it relates to contaminant migration via groundwater, surface water, and air.**

   Drums were stored in an outdoor storage area on an asphalt surface; some were on wooden pallets. A containment berm did not exist. The storage area was also unprotected from the weather. The Delaware River is located approximately 950 feet downslope of the former drum storage area.

Ref. Nos. 1, 2, 3, 4

PART II: WASTE SOURCE INFORMATION

For each of the waste units identified in Part I, complete the following six items.

Waste Unit 2 - Assorted Disposals, Unknown

1. **Identify the RCRA permit status, if applicable, and the age of the waste unit.**

   The facility is classified as a generator of hazardous wastes; therefore, a RCRA permit is not required. Hazardous wastes generated are stored on site for less than 90 days. The facility is in compliance with RCRA regulations.

2. **Describe the location of the waste unit and identify clearly on the site map.**

   During the NUS FIT 2 off-site reconnaissance, out-of-service storage tanks were observed in a pile of rubble on the eastern edge of Plant No. 2, on the west side of Building 37 on Delaware Ave. Stained soils were noted at Plant No. 2 near Delaware Ave. Storage batteries and asbestos are reported to have been placed in this area, but their exact location is unknown.

3. **Identify the size or quantity of the waste unit (e.g., area or volume of a landfill or surface impoundment, number and capacity of drums or tanks). Specify the quantity of hazardous substances in the waste unit.**

   Unknown

4. **Identify the physical state(s) of the waste type(s) as disposed of in the waste unit. The physical state(s) should be categorized as follows: solid, powder or fines, sludge, slurry, liquid, or gas.**

   Liquid and solid wastes are possibly present on site.

5. **Identify specific hazardous substance(s) known or suspected to be present in the waste unit.**

   Stained soils, possibly with oil, and asbestos are suspected to be present on site. Twelve monitoring wells on site are reported to be contaminated with oil.

6. **Describe the containment of the waste unit as it relates to contaminant migration via groundwater, surface water, and air.**

   No containment of the waste is known.

Ref. Nos. 1, 5, 12

PART III: HAZARD ASSESSMENT

GROUNDWATER ROUTE

1. **Describe the likelihood of a release of contaminant(s) to the groundwater as follows: observed, alleged, potential, or none. Identify the contaminant(s) detected or suspected, and provide a rationale for attributing the contaminant(s) to the facility.**

   There is no potential for a release of contaminants to the groundwater, since waste solvents are accumulated in drums on site for no more than 90 days. Storage is apparently in compliance with RCRA generator requirements. Likelihood of release from the two storage tanks is unknown.

   Ref. Nos. 1, 5, 12

2. **Describe the aquifer of concern; include information such as depth, thickness, geologic composition, permeability, overlying strata, confining layers, interconnections, discontinuities, depth to water table, groundwater flow direction.**

   The aquifer of concern is the Potomac-Raritan-Magothy system, which is made up of alternating layers of sand, gravel, silt, and clay and is part of the New Jersey Coastal Plain Aquifer system. This is overlain by highly permeable Pleistocene sand and gravel. The thickness of the aquifer system is approximately 200 feet in the Camden area. The aquifers throughout the coastal plain are all interconnected. Depth to groundwater is approximately 30 to 40 feet. The site lies within the recharge area for the New Jersey Coastal Plain Sole Source Aquifer System.

   Ref. Nos. 6, pp. 18, 22, 36; 7; 9

3. **Is a designated sole source aquifer within 3 miles of the site?**

   Yes, the site is located in the New Jersey Coastal Plain, which is a designated sole source aquifer.

   Ref. No. 7

4. **What is the depth from the lowest point of waste disposal/storage to the highest seasonal level of the saturated zone of the aquifer of concern?**

   The depth from the surface to the saturated zone of the aquifer is 30 to 40 feet in this area.

   Ref. Nos. 8, 9

5. **What is the permeability value of the least permeable intervening stratum between the ground surface and the aquifer of concern?**

   The stratum overlying the aquifer of concern is Pleistocene sand and gravel, which has a permeability value of 10^{-3} cm/sec.

   Ref. No. 6, 10

6. **What is the net precipitation for the area?**

   Net precipitation is approximately 10 inches.

   Ref. No. 10

7. **Identify uses of groundwater within 3 miles of the site (i.e., private drinking source, municipal source, commercial, industrial, irrigation, unusable).**

   Groundwater is the sole source for potable water for the area. The availability of an unthreatened alternative supply for the groundwater users within 3 miles is unknown.

   Ref. No. 7

8. **What is the distance to and depth of the nearest well that is currently used for drinking or irrigation purposes?**

   Distance Approximately 4500 feet **Depth** 166 feet

   Ref. Nos. 4, 8

9. **Identify the population served by the aquifer of concern within a 3-mile radius of the site.**

   Approximately 17,000 are served by groundwater within 1 mile of the site. Beyond that distance, parts of Pennsylvania are included in the 1- to 3-mile radius. Information is not readily available for that area. Seventeen thousand should be considered a minimum number of people served. The total population for the 3-mile radius is 370,000.

   Ref. Nos. 4, 11

SURFACE WATER ROUTE

10. **Describe the likelihood of a release of contaminant(s) to surface water as follows: observed, alleged, potential, or none. Identify the contaminant(s) detected or suspected, and provide a rationale for attributing the contaminants to the facility.**

    There is a potential for a release of contaminants to the Delaware River, located approximately 950 feet downslope of the drum storage area. Possible contaminants are waste solvents which were stored on site.

    Ref. Nos. 1, 4, 12

11. **Identify and locate the nearest downslope surface water. If possible, include a description of possible surface drainage patterns from the site.**

    The nearest downslope surface water is the Delaware River, located approximately 950 feet west of the drum storage area. The Delaware River is tidally influenced in the Camden area.

    Ref. Nos. 4, 13

12. **What is the facility slope in percent? (Facility slope is measured from the highest point of deposited hazardous waste to the most downhill point of the waste area or to where contamination is detected.)**

    Less than 1 percent.

    Ref. No. 4

13. **What is the slope of the intervening terrain in percent? (Intervening terrain slope is measured from the most downhill point of the waste area to the probable point of entry to surface water).**

    Less than 1 percent

    Ref. No. 4

14. **What is the 1-year 24-hour rainfall?**

The 1-year 24-hour rainfall is approximately 2.7 inches.

Ref. No. 10

15. **What is the distance to the nearest downslope surface water? Measure the distance along a course that runoff can be expected to follow.**

The distance to the Delaware River is approximately 950 feet.

Ref. No. 4

16. **Identify uses of surface waters within 3 miles downstream of the site (i.e., drinking, irrigation, recreation, commercial, industrial, not used).**

The uses of the Delaware River within 3 miles downstream of the site are recreational and industrial. There are no drinking water intakes or irrigation uses within 3 miles of the site.

Ref. Nos. 13, 14

17. **Describe any wetlands, greater than 5 acres in area, within 2 miles downstream of the site. Include whether it is a freshwater or coastal wetland.**

None.

Ref. No. 4

18. **Describe any critical habitats of federally listed endangered species within 2 miles of the site along the migration path.**

No federally listed endangered species are known to occur within a 2-mile radius of the site.

Ref. No. 17

19. **What is the distance to the nearest sensitive environment along or contiguous to the migration path (if any exist within 2 miles)?**

There are no sensitive environments within 2 miles.

Ref. No. 4

20. **Identify the population served or acres of food crops irrigated by surface water intakes within 3 miles downstream of the site and the distance to the intake(s).**

There are no drinking water or irrigation intakes within 3 miles of the site.

Ref. Nos. 13, 14

21. **What is the state water quality classification of the water body of concern?**

Zone 3.

Ref. Nos. 15, 16

22. **Describe any apparent biota contamination that is attributable to the site.**

None known.

Ref. No. 1

AIR ROUTE

23. **Describe the likelihood of a release of contaminant(s) to the air as follows: observed, alleged, potential, none. Identify the contaminant(s) detected or suspected, and provide a rationale for attributing the contaminant(s) to the facility.**

None.

24. **What is the population within a 4-mile radius of the site?**

Approximately 650,000 people live within 4 miles of the site.

Ref. No. 11

FIRE AND EXPLOSION

25. **Describe the potential for a fire or explosion to occur with respect to the hazardous substance(s) known or suspected to be present on site. Identify the hazardous substance(s) and the method of storage or containment associated with each.**

There is no potential for fire or explosion since the drums are stored in compliance with RCRA specifications.

Ref. No. 1

26. **What is the population within a 2-mile radius of the hazardous substance(s) at the facility?**

Approximately 110,000 people live within 2 miles of the site.

Ref. No. 11

DIRECT CONTACT/ON-SITE EXPOSURE

27. **Describe the potential for direct contact with hazardous substance(s) stored in any of the waste units on site or deposited in on-site soils. Identify the hazardous substance(s) and the accessibility of the waste unit.**

There is a potential for direct contact by the demolition crew with any hazardous wastes or contaminated soils which may be on site.

Ref. No. 5

28. **How many residents live on a property whose boundaries encompass any part of an area contaminated by the site?**

None known.

29. **What is the population within a 1-mile radius of the site?**

Approximately 17,000 people live within 1 mile of the site.

Ref. No. 11

PART IV: SITE SUMMARY AND RECOMMENDATIONS

Campbell Soup Company (Market Street) is a privately owned can manufacturing facility located in an industrial area in Camden, Camden County, New Jersey. The facility is made up of two plants: Plant No. 1, an active manufacturer located one block from the Delaware River, and Plant No. 2, an inactive manufacturer located along the Delaware River. The waste units of concern were located at Plant No. 2, where approximately 100 gallons/day of waste solvents were generated during the process of coating the inner surface of cans with enamel. These waste solvents were drummed and stored on site for less than 90 days on an asphalt drum storage area at Plant No. 2. Also generated as hazardous waste was condensate from an electrostatic precipitator used on the enamel baking oven. It is unknown whether any hazardous wastes are generated or stored on site at Plant No. 1.

During an off-site reconnaissance of the site, Plant No. 2 was discovered to have been demolished approximately 1 year ago. One gutted building (Building 37) remains standing and will be torn down by July 1989 so that the land can be signed over to RCA to be used as a parking lot. On the west side of Building 37, stained soils were reported and two storage tanks were seen in a pile of rubble. Campbell Soup Company has a NJPDES permit and air permits. In March 1983, Campbell Soup Company successfully withdrew its RCRA Part A application and is no longer a TSD facility, but is classified solely as a generator. The facility is in compliance with RCRA regulations.

Twelve monitoring wells are reported to be on site. A New Jersey Department of Environmental Protection (NJDEP) representative indicated that oil was detected in groundwater and attributed its presence to contaminated fill used to backfill the area. The site overlies the New Jersey Coastal Plain Sole Source Aquifer System. Groundwater is the sole source for potable water for the Camden area and serves approximately 17,000 people within one mile of the site. This property is currently involved in the State of New Jersey Environmental Cleanup Responsibility Act (ECRA) program to monitor the Plant No. 2 property prior to its sale to RCA.

Based on the apparent compliance with RCRA generator requirements, the absence of drums on site, and the ECRA involvement with Plant No. 2, this site is recommended for **NO FURTHER REMEDIAL ACTION PLANNED (NFRAP)** and deferred to the State of New Jersey ECRA program which is presently involved in the monitoring of the site.

ATTACHMENT A

MAPS AND PHOTOS

CAMPBELL SOUP COMPANY (MARKET STREET)

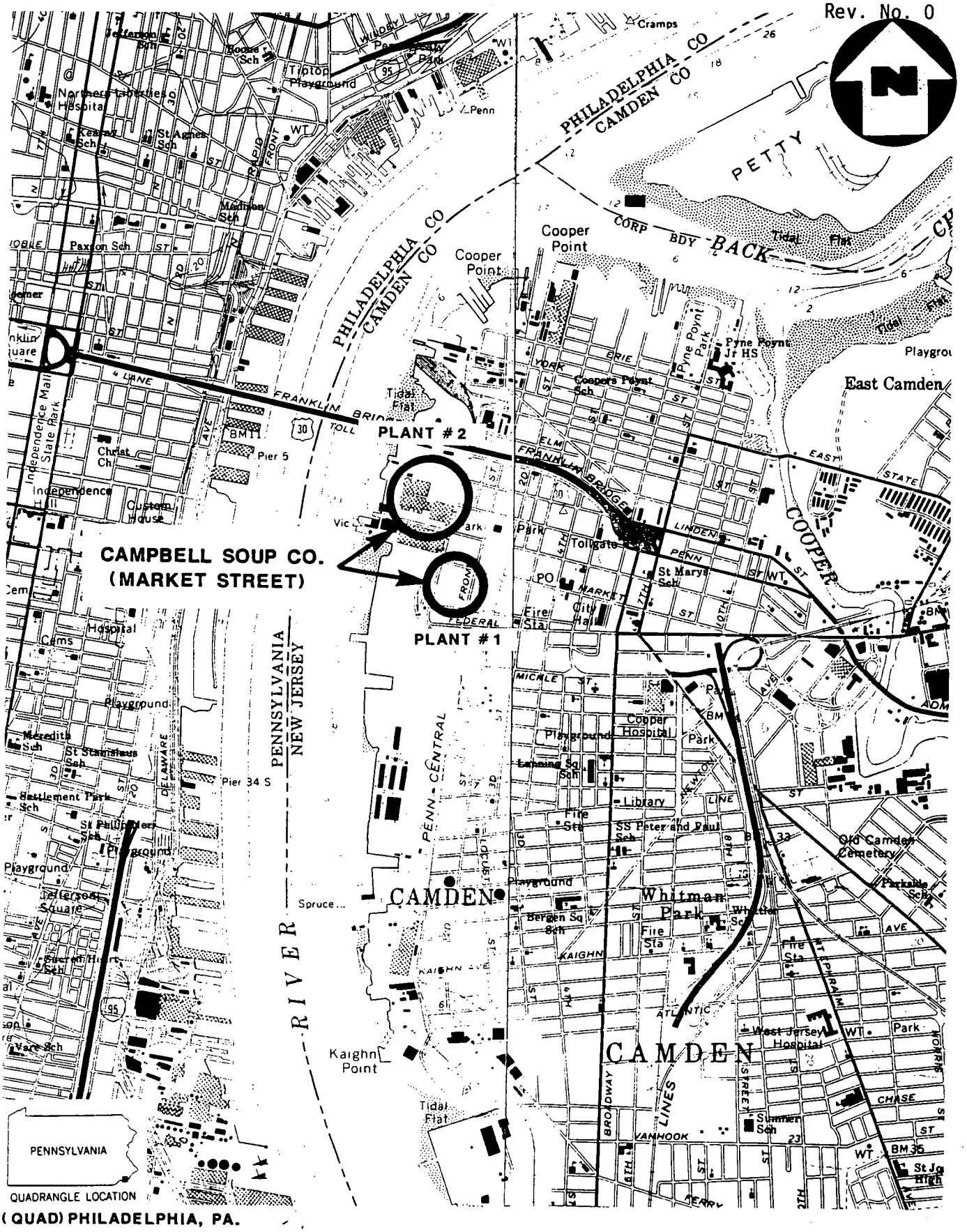
CAMDEN, NEW JERSEY

CONTENTS

Figure 1: Site Location Map

Figure 2: Site Map

Exhibit A: Photograph Log



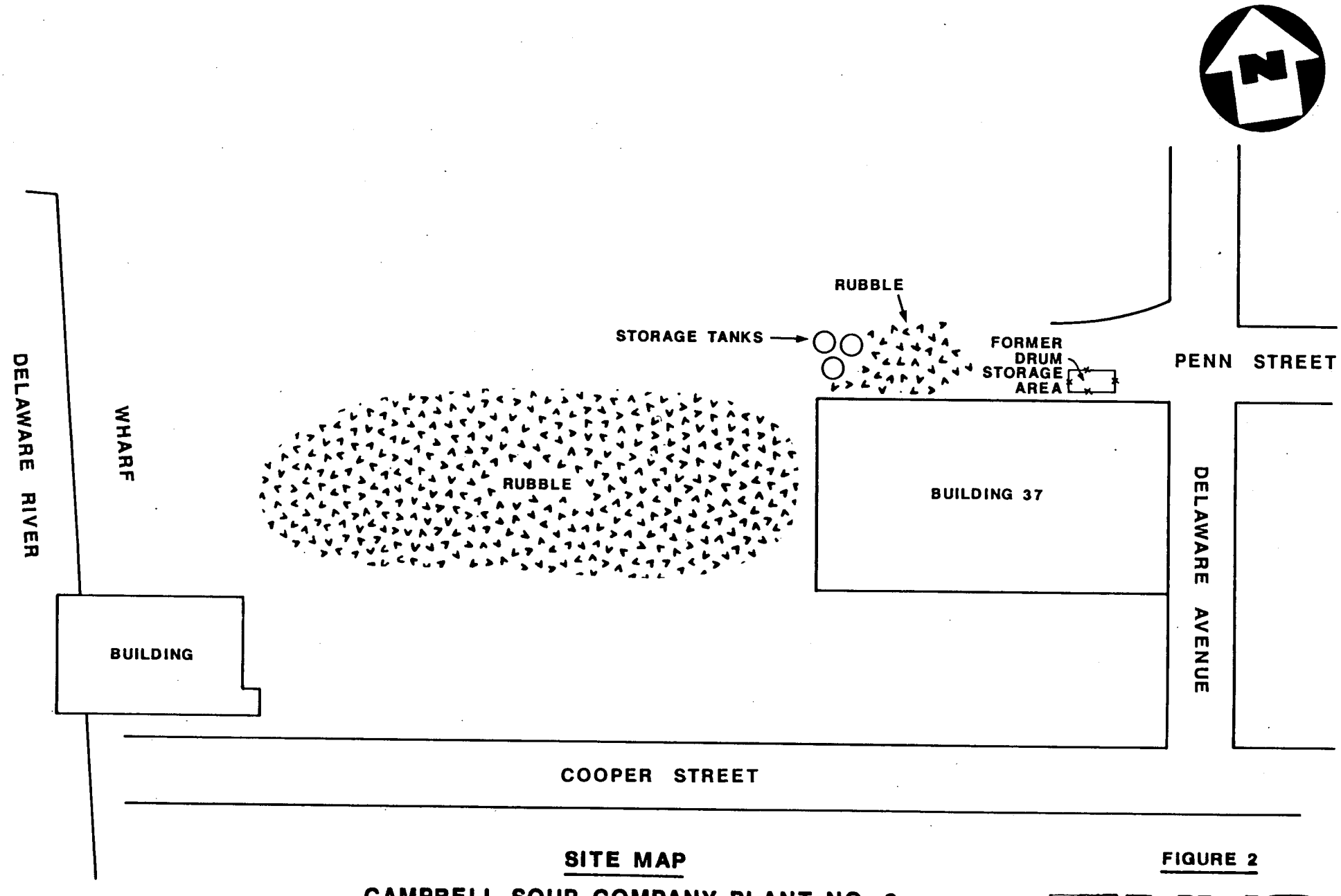
(QUAD) PHILADELPHIA, PA.

SITE LOCATION MAP
CAMPBELL SOUP COMPANY (MARKET STREET), CAMDEN, N.J.

SCALE: 1" = 2000'

FIGURE 1

NUS CORPORATION



SITE MAP

CAMPBELL SOUP COMPANY PLANT NO. 2

(MARKET STREET), CAMDEN, N.J.

(NOT TO SCALE)

FIGURE 2

NUS CORPORATION

EXHIBIT A
PHOTOGRAPH LOG

Campbell Soup Company (Market Street)
Camden, New Jersey
TDD No. 02-8901-04
January 11, 1989

CAMPBELL SOUP COMPANY (MARKET STREET)
CAMDEN, NEW JERSEY
JANUARY 11, 1989

PHOTOGRAPH INDEX

Photo Number	Description	Time
1P-10	East side of Plant No. 1.	1018
1P-11	East side of Plant No. 1.	1020
1P-12	Remains of Plant No. 2 from Delaware Ave.	1034
1P-13	West side of Building 37 at Plant No. 2. Looking at former drum storage area.	1041
1P-14	Rubble seen from east side of Building 37.	1050

Photographs 1P-10 and 1P-11 taken by Kurt Fendler.
Photographs 1P-12, 1P-13, and 1P-14 taken by Diane Trube.

CAMPBELL SOUP COMPANY (MARKET STREET), CAMDEN, NEW JERSEY

1P-10 January 11, 1989 1018
East side of Plant No. 1.

1P-11 January 11, 1989 1020
East side of Plant No. 1.

CAMPBELL SOUP COMPANY (MARKET STREET), CAMDEN, NEW JERSEY

1P-12 January 11, 1989 1034
Remains of Plant No. 2 from Delaware Ave.

1P-13 January 11, 1989 1041
West side of Building 37 at Plant No. 2. Looking at former drum storage area.

CAMPBELL SOUP COMPANY (MARKET STREET), CAMDEN, NEW JERSEY

1P-14 January 11, 1989 1050
Rubble seen from east side of Building 37.

ATTACHMENT B

REFERENCES

REFERENCES

1. RCRA Inspection Reports, Campbell Soup Company. NJDEP, June 5, 1981 and January 27, 1983.

2. Notifications of Hazardous Waste Activity, Campbell Soup Company. U.S. Environmental Protection Agency, August 18, 1980.

3. Code of Federal Regulations, Volume 40, Part 261. 21-33. The Office of the Federal Register National Archives and Records Administration. July 1, 1985.

4. Three-Mile Vicinity Map for Campbell Soup Co., based on U.S.G.S. Topographic Maps 7.5 Minute Series, "Camden, NJ Quadrangle," 1967 photorevised 1973, and "Philadelphia, PA Quadrangle", 1967 photorevised 1973.

5. Off-site Reconnaissance Information Reporting Form, NUS Corp. Region 2 FIT, January 11, 1989.

6. Geology and Groundwater Resources of Camden County, New Jersey, U.S. Geological Survey Water Resources Investigations 76-76, June 1976.

7. Federal Register, Vol. 53, No. 122, New Jersey Coastal Plain Aquifer System, New Jersey Sole Source Aquifer Final Determination. June 24, 1988.

8. U.S. Geological Survey, Selected Information of Wells from the Ground Water Site Inventory Data Base Camden County. Trenton, New Jersey, February 20, 1986.

9. Water levels in Major Artesian Aquifers of the New Jersey Coastal Plain, 1983. U.S. Geological Survey Water Resources Investigations Report 86-4028.

10. Uncontrolled hazardous waste site ranking system, A user's manual, 40 CFR, Part 30, Appendix A, 1986.

11. General Sciences Corporation, Graphical Exposure Modeling Systems (GEMS). Landover, Maryland, 1986.

12. Telecon Note: Conversation between Mr. Art Trenham, ECRA, and Tammy Marquart, NUS Corp., February 14, 1989. Re: ECRA Investigation for Campbell Soup.

13. Telecon Note: Conversation between Mr. John Rattie, Delaware River Basin Commission, and Tammy Marquart, NUS Corp., February 14, 1989. Re: Surface water use.

14. Telecon Note: Conversation between Mr. John Rattie, Delaware River Basin Commission, and Thomas Varner, NUS Corp., February 15, 1989. Re: Agricultural intakes.

15. Surface Water Quality Standards N.J.A.C. 7:9-4, Index C-Surface Water Classifications of the Delaware River Basin. State of New Jersey Department of Environmental Protection/Division of Water Resources, May 1985.

16. Surface Water Quality Standards N.J.A.C. 7:9-4.1 et. seq., May 1985.

17. Letter from Clifford G. Day, Supervisor, U.S. Department of the Interior, Fish and Wildlife Service, to Valerie Mathers, NUS Corp., February 7, 1989.

REFERENCE NO. 1

354

RCRA GENERATOR INSPECTION FORM

COMPANY NAME:
CAMPBELL SOUP COMPANY

EPA I.D. NUMBER:
NJD003955195

COMPANY ADDRESS:
100 MARKET STREET CAMDEN, N.J.

COMPANY CONTACT OR OFFICIAL:
ED ZEAZER

INSPECTOR'S NAME:
ALBERT FRALINGER

TITLE:
SR PURCHASING AGENT

BRANCH/ORGANIZATION:
NJ-DEP-SWA

CHECK IF FACILITY IS ALSO A TSD FACILITY /X/

DATE OF INSPECTION:
6-5-81

	YES	NO	DON'T KNOW
(1) Is there reason to believe that the facility has hazardous waste on site?	✓		

a. If yes, what leads you to believe it is hazardous waste? Check appropriate box:

- [ ] Company admits that its waste is hazardous during the inspection.
- [X] Company admitted the waste is hazardous in its RCRA notification and/or Part A Permit Application.
- [ ] The waste material is listed in the regulations as a hazardous waste from a nonspecific source (§261.31)
- [ ] The waste material is listed in the regulations as a hazardous waste from a specific source (§261.32)
- [ ] The material or product is listed in the regulations as a discarded commercial chemical product (§261.33)
- [ ] EPA testing has shown characteristics of ignitability, corrosivity, reactivity or extraction procedure toxicity, or has revealed hazardous constituents (please attach analysis report)
- [ ] Company is unsure but there is reason to believe that waste materials are hazardous. (Explain)

	YES	NO	DON'T KNOW
b. Is there reason to believe that there are hazardous wastes on-site which the company claims are merely products or raw materials?	—	X	—

Please explain:

c. Identity the hazardous wastes that are on-site, and estimate approximate quantities of each.

46- 55 gallon drums - spent solvent from clean up of tin can manufacturing. Foil non-specific source. Trichloroethane, mineral spirits and soap

d. Describe the activities that result in the generation of hazardous waste.

Solvents used to wash and clean machines in enameling operations of can manufacturing. Generate approximately 100 gallons/day of waste.

(2) Is hazardous waste stored on site?	✓	—	—

a. What is the longest period that it has been accumulated?

4-16-81

b. Is the date when drums were placed in storage marked on each drum? a number is placed on each drum and is cross referenced to a log for the storage date.	—	✓	—
(3) Has hazardous waste been shipped from this facility since November 19, 1980?	✓	—	—

a. If "yes," approximately how many shipments were made?

3 shipments 80 drums/load

(4) Approximately how many hazardous waste shipments off site have been made since November 19, 1980? 3

a. Does it appear from the available information that there is a manifest copy available for each hazardous waste shipment that has been made?	✓	—	—

b. If "no" or "don't know," please elaborate.

—

	YES	NO	DON'T KNOW
c. Does each manifest (or a representative sample) have the following information?			
- a manifest document number	✓		
- the generator's name, mailing address, telephone number, and EPA identification number	✓		
- the name, and EPA identification number of each transporter	✓		
- the name, address and EPA identification number of the designated facility and an alternate facility, if any:		✓	
- a description of the wastes (DOT)	✓		
- the total quantity of each hazardous waste by units of weight or volume, and the type and number of containers as loaded into or onto the transport vehicle	✓		
- a certification that the materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation under regulations of the Department of Transportation and the EPA	✓		
(5) Were there any hazardous wastes stored on site at the time of the inspection?	✓		
a. If "yes," do they appear properly packaged (if in containers) or, if in tanks, are the tanks secure?	✓		
b. If not properly packaged or in secure tanks, please explain.			
c. Are containers clearly marked and labelled?	✓		
d. Do any containers appear to be leaking?		✓	
e. If "yes," approximately how many?			

*(6) Has the generator submitted an annual report to EPA covering the previous calendar year? N/A

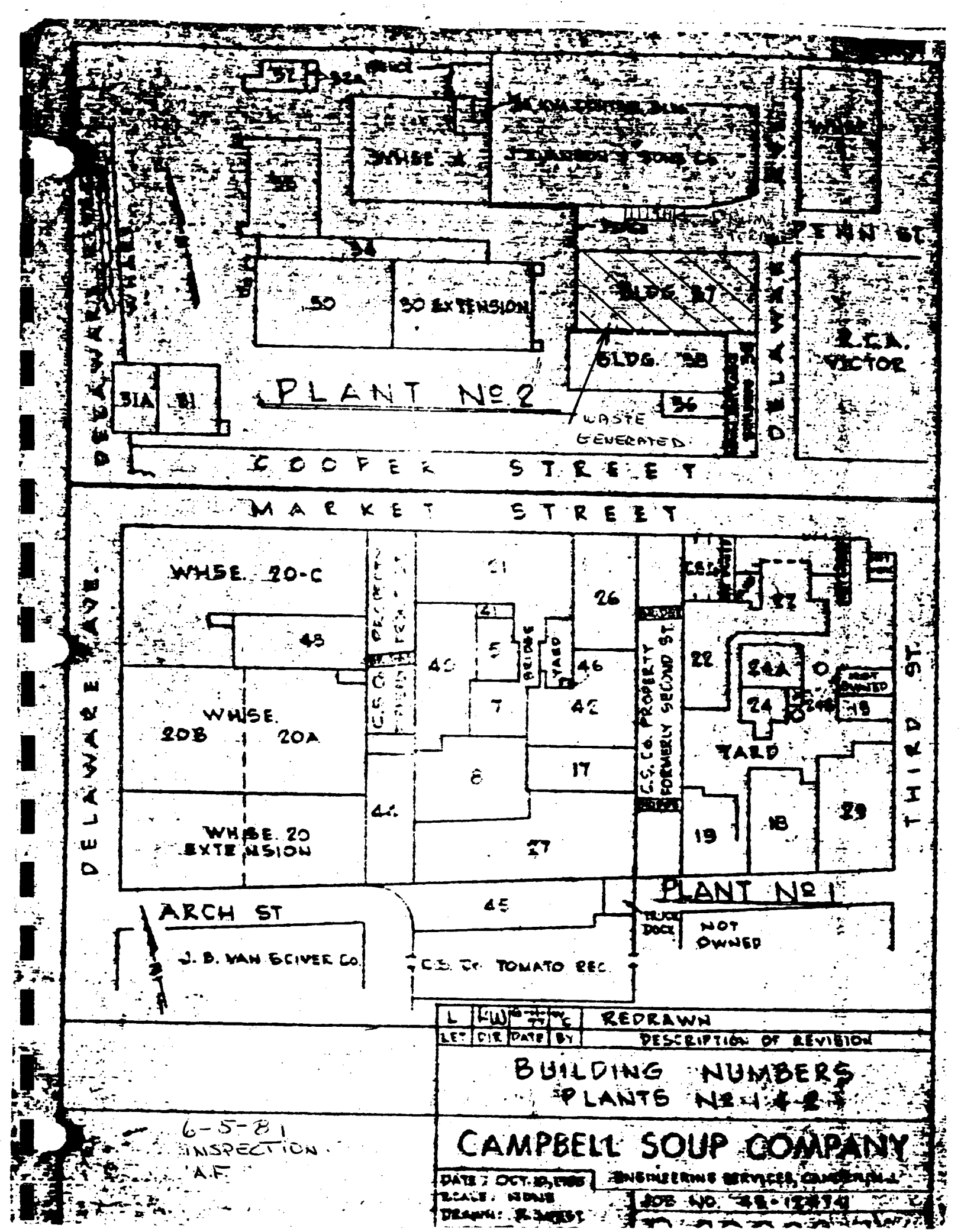
a. How do you know?

(7) Has the generator received signed copies (from the TSD facility) of all manifests for wastes shipped off site more than 35 days ago? ✓

a. If "no," have Exception Reports been submitted to EPA covering these shipments?

(8) General comments. CAMPBELL SOUP GENERATES SPENT SOLVENT WASTE AT THEIR PLANT #2 SITE WHERE ENAMEL IS BAKED ONTO TIN CANS. WASH AND CLEANING OF THIS EQUIPMENT WITH TRI CHLOROETHANE, MINERAL SPIRITS AND SOAP OCCURS USUALLY IN A BATH TANK AND THE SPENT SOLVENT IS LATER DRAWN OFF AND DRUMMED CAMPBELL DEALS WITH MARISOL INC AS A DISPOSER. THE CLEANING PROCESS GENERATES APPROX 100 GALLONS / DAY OF WASTE, DEPENDING ON PRODUCT AT THE TIME OF INSPECTION CAMPBELL SOUPS WAS SHUT DOWN. ALSO ON SITE ARE 3 - UNDER GROUND 5000 GALLON STORAGE TANKS. 2 OF THESE TANKS ARE FOR ENAMEL AND THE THIRD HOLDS THE THINNER OR SOLVENT USED FOR A CLEANER.

* The effective date for this requirement is March 1, 1982.


COOPER STREET
MARKET STREET
DELAWARE AVE.
THIRD ST.
PENN ST.
PLANT No 2
PLANT No 1
WHSE. 20-C
WHSE. 20B
WHSE. 20A
WHSE. 20 EXTENSION
50
50 EXTENSION
BLDG. 37
BLDG. 38
R.C.A. VICTOR
WASTE GENERATED
ARCH ST
J. D. VAN SCIVER CO.
C.S. Co. TOMATO REC.
C.S. CO. PROPERTY FORMERLY SECOND ST.
YARD
TRUCK DOCK
NOT OWNED
REDRAWN
BUILDING NUMBERS
PLANTS No 1 & 2
CAMPBELL SOUP COMPANY
ENGINEERING SERVICES, CAMDEN, N.J.
DATE: OCT. 30, 1980
SCALE: NONE
DRAWN: R. SWEET
JOB NO. 48-12874
6-5-81
INSPECTION
A.F.

RCRA TREATMENT, STORAGE AND DISPOSAL FACILITY INSPECTION FORM
FOR TSD FACILITIES ONLY

COMPANY NAME: CAMPBELL SOUP CO. EPA I.D. Number:

COMPANY ADDRESS: 100 MARKET ST. CAMDEN, N.J.

COMPANY CONTACT OR OFFICIAL:

ED. ZEAZER

TITLE:

SR. PURCHASING AGENT

INSPECTOR'S NAME:

ALBERT FRALINGER

BRANCH/ORGANIZATION:

NJ-DEP-SWA

OTHER ENVIRONMENTAL PERMITS HELD

BY FACILITY: ☐ NPDES

☒ AIR — P-20052, C-7266, C-7267, C-9313, C-7093, C-7100, C-9878, C-21983, C-6710, C-6711

☐ OTHER

DATE OF INSPECTION:

6-5-81

TIME OF DAY INSPECTION TOOK PLACE:

1:30 P.M

(1) Is there reason to believe that the facility has hazardous waste on site?

a. If yes, what leads you to believe it is hazardous waste? Check appropriate box:

☐ Company admits that its waste is hazardous during the inspection.

☒ Company admitted the waste is hazardous in its RCRA notification and/or Part A Permit Application.

☐ The waste material is listed in the regulations as a hazardous waste from a nonspecific source (§261.31)

☐ The waste material is listed in the regulations as a hazardous waste from a specific source (§261.32)

☐ The material or product is listed in the regulations as a discarded commercial chemical product (§261.33)

☐ EPA testing has shown characteristics of ignitability, corrosivity, reactivity or extraction procedure toxicity, or has revealed hazardous constituents (please attach analysis report)

☐ Company is unsure but there is reason to believe that waste materials are hazardous. (Explain)

	YES	NO	DON'T KNOW
b. Is there reason to believe that there are hazardous wastes on-site which the company claims are merely products or raw materials?	___	X	___

Please explain:

JUN 17 2:51 PM '81
ENVIRONMENTAL PROTECTION AGENCY
NEW YORK, N.Y. 10007

VISUAL OBSERVATIONS

		YES	NO	DON'T KNOW
(5)	SITE SECURITY (§265.14)			
	a. Is there a 24-hour surveillance system? GUARD - PATROL	✓		
	b. Is there a suitable barrier which completely surrounds the active portion of the facility?	✓		
	c. Are there "Danger-Unauthorized Personnel Keep Out" signs posted at each entrance to the facility?	✓		
(6)	Are there ignitable, reactive or incompatible wastes on site? (§265.27)	✓		
	a. If "YES", what are the approximate quantities? 46 - 55 GALLON DRUMS			
	b. If "YES", have precautions been taken to prevent accidential ignition or reaction of ignitable or reactive waste?	✓		
	c. If "YES", explain = PROPER DRUM INTEGRITY AND USE OF PALLETS			
	d. In your opinion, are proper precautions taken so that these wastes do not:			
	- generate extreme heat or pressure, fire or explosion, or violent reaction?	✓		
	- produce uncontrolled toxic mists, fumes, dusts, or gases in sufficent quantities to threaten human health?	✓		
	- produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions?	✓		
	- damage the structural integrity of the device or facility containing the waste?	✓		
	- threaten human health or the environment?	✓		

Please explain your answers, and comment if necessary.

e. Are there any additional precautions which you would recommend to improve hazardous waste handling procedures at the facility? NO

	YES	NO	DON'T KNOW
- an internal communications or alarm system?	✓		
- a telephone or other device to summon emergency assistance from local authorities?	✓		
- portable fire equipment?	✓		
- adequate aisle space?	✓		
- in your opinion, do the types of wastes on site require all of the above procedures, or are some not needed? Explain.	✓		

THEY ARE NEEDED DUE TO THE FLAMABILITY CHARACTERISTICS OF THE WASTE INVOLVED.

In your opinion, do the types of wastes on site require all of the above procedures, or are some not needed? Explain.

YES - WASTE CHARACTERISTICS SHOW A NEED FOR THESE PRECAUTIONS.

*(8) Have you inspected to verify that the groundwater monitoring wells (if any) mentioned in the facility's groundwater monitoring plan (see no. 19 below) are properly installed?	N/A		
If you have, please comment, as appropriate.			
(9) a. Is there any reason to believe that groundwater contamination already exists from this facility? If "YES", explain.		✓	
b. Do you believe that operation of this facility may affect groundwater quality?			✓

c. If "YES", explain.

DRUMS ARE STORED IN A AREA WHERE RUNOFF COULD OCCUR IN THE EVENT A DRUM IS DAMAGED.

RECORDS INSPECTION

(10) Has the facility received hazardous waste from an off-site source since Nov. 19, 1980 (effective date of the regulations)?		✓	
a. If "YES", does it appear that the facility has	N/A		

	YES	NO	NOT KNOW
- the generator's name, mailing address, telephone number, and EPA identification number	N/A		
- the name, and EPA identification number of each transporter	N/A		
- the name, address and EPA identification number of the designated facility and an alternate facility, if any;	N/A		
- a DOT description of the wastes	N/A		
- the total quantity of each hazardous waste by units of weight or volume, and the type and number of containers as loaded into or onto the transport vehicle	N/A		
- a certification that the materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation under regulations of the Department of Transportation and the EPA	N/A		
d. Are there any indications that unmanifested hazardous wastes have been received since November 19, 1980? If YES, explain.	N/A		
(11) Does the facility have a written waste analysis plan specifying test methods, sampling methods and sampling frequency? (§265.13)		✓	
a. Does the character of wastes handled at the facility change from day to day, week to week, etc., thus requiring frequent testing? (You may check more than one) Waste characteristics vary ____ All wastes are basically the same ✓ Company treats all waste as hazardous ✓ Don't Know ____ CLAIM: WASTE CONTAINS ONLY INGREDIENTS OF FOOD GRADE ENAMEL AND SOLVENT.			
b. Does hazardous waste come to this facility from off-site sources?		✓	
c. If waste comes from an off-site source, are there procedures in the plan to insure that wastes received conform to the accompanying manifest?	N/A		
(12) INSPECTIONS (§265.15)			
a. Does the facility have a written inspection schedule?	✓		
b. Does the schedule identify the types of problems to be looked for and the frequency for inspections?	✓		
c. Does the owner/operator record inspections			

- an estimate of the maximum inventory of wastes in storage or treatment at any time during the life of the facility? 219 Drums ✓ ___ ___

- a description of the steps necessary to decontaminate facility equipment during closure? ✓ ___ ___

- a schedule for final closure including the anticipated date when wastes will no longer be received and when final closure will be completed? ✓ ___ ___

b. What is the anticipated date for final closure? DEPENDENT ON PLANT PRODUCTION FUTURE N/A ___ ___ ___

c. Does the owner/operator have a written post-closure plan identifying the activities which will be carried on after closure and the frequency of these activities? ✓ ___ ___

d. Does the written post-closure plan include:

- a description of planned groundwater monitoring activities and their frequencies during post-closure? ___ ✓ ___

- a description of planned maintenance activities and frequencies to ensure integrity of final cover during post-closure? N/A ___

- the name, address and phone number of a person or office to contact during post-closure? WOULD USE THOSE EMPLOYED AT THE TIME ___ ✓ ___

*(17) Does the owner/operator have a written estimate of the cost of closing the facility? (§265.142) What is it? $ 43,800.00 ✓ ___ ___

*(18) Does the owner/operator have a written estimate of the cost for post-closure monitoring and maintenance? What is it? (§265.144) ___ ✓ ___

COST IS INCLUDED IN FINAL CLOSURE COST ___ ___ ___

*(19) Has a groundwater monitoring plan been submitted to the Regional Administrator for facilities containing a surface impoundment, landfill or land treatment process? (This requirement does not apply to recycling facilities.) (§265.90) N/A

a. Does the plan indicate that at least one monitoring well has been installed hydraulically upgradient from the limit of the waste mangement area? N/A ___ ___ ___

b. Does the plan indicate that there are at least three monitoring wells installed hydraulically downgradient at the limit of the waste management area? N/A ___ ___ ___

SITE-SPECIFIC

Please circle all appropriate activities and answer questions on indicated pages for all activities circled. When you submit your report, include only those site-specific pages that you have used.

STORAGE	TREATMENT	DISPOSAL
Waste Pile p. 9	Tank p. 8	Landfill pp. 10-11
Surface Impoundment p. 8	Surface Impoundment pp. 8-9	Land Treatment pp. 9, 10
Container p. 7	Incineration pp. 12-13	Surface Impoundment p. 8
Tank, above ground p. 8	Thermal Treatment pp. 12-13	Other _____
Tank, below ground p. 8	Land Treatment pp. 9-10	
Other _____	Chemical, Physical p. 13 and Biological Treatment (other than in tanks, surface impoundment or land treatment facilities)	
	Other _____	

CONTAINERS (§265.170)

	YES	NO	DON'T KNOW
1. Are there any leaking containers? If "YES", explain.		✓	
2. Are there any containers which appear in danger of leaking? If "YES", explain.		✓	
3. Do wastes appear compatible with container materials?	✓		
4. Are all containers closed except those in use?	✓		
5. Do containers appear to be opened, handled or stored in a manner which may rupture the containers or cause them to leak?		✓	
6. How often does the plant manager claim to inspect container storage areas?	Daily		
7. Does it appear that incompatible wastes are being stored in close proximity to one another? If "YES", explain.		✓	

TANKS (§265.190)

N/A

	YES	NO	DON'T KNOW
1. Are there any leaking tanks? If "YES", explain.	—	—	—
2. Are there any tanks which appear in danger of leaking. If "YES", explain.	—	—	—
3. Are wastes or treatment reagents being placed in tanks which could cause them to rupture, leak, corrode or otherwise fail? If "YES", explain.	—	—	—
4. Do uncovered tanks have at least 2 feet of freeboard or an adequate containment structure?	—	—	—
5. Where hazardous waste is continuously fed into a tank, is the tank equipped with a means to stop this inflow?	—	—	—
6. Does it appear that incompatible wastes are being stored in close proximity to one another, or in the same tank? If "YES", explain.	—	—	—
7. How often does the plant manager claim to inspect container storage areas?			
8. Are ignitable or reactive wastes stored in a manner which protects them from a source of ignition or reaction? If "YES", explain.	—	—	—
9. What is the approximate number and size of tanks containing hazardous wastes?			

SURFACE IMPOUNDMENTS (§265.220)

N/A

1. Is there at least 2 feet of freeboard in the impoundment?	—	—	—
2. Do all earthen dikes have a protective cover to preserve their structural integrity? If "YES", specify type of covering.	—	—	—
3. Is there reason to believe that incompatible wastes are being placed in the same surface impoundment? If "YES", explain.	—	—	—

4. Are ignitable or reactive wastes being placed in surface impoundments without being treated to remove these characteristics? If "YES", explain. ___ ___ ___

5. Are there any leaks, failures or is there any deteriorization in the impoundments? If "YES", explain. ___ ___ ___

6. Give the approximate size of surface impoundments (gallons or cubic feet).

WASTE PILES (§265.250) N/A

1. Is the waste pile protected from wind erosion? ___ ___ ___

   a. Does it appear to need such protection? ___ ___ ___

   b. Explain what type of protection exists.

2. Does it appear that incompatible wastes are being stored in the same waste pile? If "YES", explain. ___ ___ ___

3. Is leachate run-off from a pile a hazardous waste? If "YES", explain this determination and answer (a) and (b) below. ___ ___ ___

   a. Is the pile placed on an impermeable base that is compatible with the waste? ___ ___ ___

   b. Is the pile protected from precipitation and run-on? ___ ___ ___

4. In your judgment, are ignitable or reactive wastes managed in such a way that they are protected from any material or conditions which may cause them to ignite? Please explain or indicate if no such wastes are present. ___ ___ ___

   Are they placed on an existing pile so that they no longer meet the definition of ignitable or reactive waste? Please explain. ___ ___ ___

5. How many waste piles are on site, and approximately how large are they?

*2. Is run-on diverted away from the active portions of the land treatment facility?	___	___	___
*3. Is run-off collected?	___	___	___
4. Are food chain crops being grown on the facility property?	___	___	___
a. If "YES", can the facility operator document that arsenic, lead and mercury:			
- will not be transferred to the crop or ingested by food chain animals or	___	___	___
- will not occur in greater concentrations in the crops grown on the land treatment facility than in the same crops grown on untreated soils.	___	___	___
b. Has notification of the growing of the food chain crops been made to the Regional Administrator?	___	___	___
5. Is there a written and implemented plan for unsaturated zone monitoring?	___	___	___
6. Are there records of the application dates, application rates, quantities and location of each hazardous waste placed in the facility?	___	___	___
7. Do the closure and post-closure plans address:			
a. control of migration of hazardous wastes into the groundwater?	___	___	___
b. control of run-off, release of airborne particulate contaminants?	___	___	___
c. compliance with requirements for the growth of food-chain crops (if they are present)?	___	___	___
8. Is ignitable or reactive waste immediately incorporated into the soil so the resulting waste no longer meets that definition? If "YES", explain.	___	___	___
9. Are incompatible wastes placed in the same land treatment area? If "YES", explain.	___	___	___
10. What is the area of the land receiving hazardous waste treatment?	___	___	___

LANDFILLS (§265.300) N/A

†1. Is run-on diverted away from the active portions of the landfill?	___	___	___
†2. Is run-off from active portions of the landfill collected?	___	___	___

	YES	NO	KNOW
3. Is waste which is subject to wind dispersal controlled? Explain.	___	___	___
4. Does the owner/operator maintain a map with:			
- the exact location and dimensions of each cell	___	___	___
- the contents of each cell and approximate location of each hazardous waste type	___	___	___
5. Do the closure and post-closure plans address:			
- control of pollutant migration via ground water?	___	___	___
- control of surface water infiltration?	___	___	___
- prevention of erosion?	___	___	___
6. Is ignitable or reactive waste treated before being placed in the landfill? Explain how you know.	___	___	___
7. Are precautions taken to insure that incompatible wastes are not placed in the same landfill cell? If "NO", explain.	___	___	___
8. Are bulk or non-containerized wastes containing free liquids placed in the landfill? If "YES",	___	___	___
a. Does the landfill have a liner which is chemically and physically resistant to the added liquid?	___	___	___
b. Is the waste treated and stabilized so that free liquids are no longer present?	___	___	___
*9. Are containers holding liquid waste or waste containing free liquids placed in the landfill?	___	___	___
10. Are empty containers (e.g. those containing less than 1/2 inch of liquid) placed in the landfills?	___	___	___
If so, are they crushed flat, shredded or similarly reduced in volume before they are buried?	___	___	___

11. What is the approximate area of the

INCINERATORS AND THERMAL TREATMENT - N/A
(§§265.340 and 265.379)

	YES	NO	DON'T KNOW
1. What type of incinerator or thermal treatment is at the site (e.g. waterwall incinerator, boiler, fluidized bed, etc.)?			
2. Was hazardous waste being incinerated or thermally treated during your inspection? If "YES", answer all following questions. If "NO", answer only questions 3 and 7.	___	___	___
3. Has waste analysis been performed (and written records kept) to include:			
- heating value of the waste	___	___	___
- halogen content	___	___	___
- sulfur content	___	___	___
- concentration of lead	___	___	___
- concentration of mercury	___	___	___

NOTE: Waste analysis need not be performed on each waste load if if there are documented data available to show waste characteristics that do not vary. If there are such documented data available, check here [ ].

4. Does it appear that the owner/operator brings his thermal treatment process to steady state (normal) conditions of operation before introducing hazardous wastes?	___	___	___
5. Did it appear during your inspection that there was adequate monitoring and inspection by owner/operator every 15 minutes during hazardous waste incineration for:			
- waste feed	___	___	___
- auxiliary fuel feed	___	___	___
- air flow	___	___	___
- incinerator temperature	___	___	___
- scrubber flow	___	___	___
- scrubber pH	___	___	___
- relevant level controls	___	___	___
- Every hour for:			
- stack plume (color and opacity)	___	___	___

a. If "YES", what is being burned? (only burning or detonation of explosives is permitted)

b. If open burning or detonation of explosives is taking place, approximately what is the distance from the open burning or detonation to the property of others?

	YES	NO	DON'T KNOW
6. Does the incinerator appear to be operating properly? (Do emergency shutdown controls and system alarms seem to be in good working order?) Please explain.	—	—	—
a. Is there any evidence of fugitive emissions?	—	—	—
7. Is the residue from the incinerator treated by the owner as a hazardous waste? Please explain.	—	—	—

8. What types of air pollution control devices (if any) are installed on the incinerator?

CHEMICAL, PHYSICAL AND BIOLOGICAL TREATMENT (§265.400) N/A

1. Does the treatment process system show any signs of ruptures, leaks, or corrosion? Please explain.	—	—	—
2. Is there a means to stop the inflow of continuously-fed hazardous wastes?	—	—	—
3. Is there ignitable or reactive waste fed into the treatment system?	—	—	—
If "YES", has it been treated or protected from any material or conditions which may cause it to ignite or react? If so, explain how.	—	—	—
Are the incompatible wastes placed in the same treatment process? If "YES", explain.	—	—	—

5. Describe the treatment system at this facility.

RCRA INSPECTION FORM

Report Prepared for:

Generator ☒

Transporter ☐

HWM (TSD) facility ☒

Copy of report sent to the facility ☐

12783

Facility Information

Name: Campbell Soup Co

Address: 100 Market st

Camden NJ

County: Camden

EPA ID#: NJD003951951

Date of Inspection: 01-27-83

Participating Personnel

State or EPA Personnel: C-Elmendorf

NJDEP

Facility Personnel: BOB SHOBER

CHARLES STRATMAN

Report Prepared by Name: C Elmendorf

Agency: NJDEP

Telephone #: (609) 859-2958

Approved for the Director by: _____

Summary of Findings

Facility Description and Operations

Facility is withdrawing RCRA status - see attached letter.

Facility manufactures cans in which soup + vegetables are canned for distribution to wholesalers. ~~The~~ The manufacturing of the cans is done on-site, it is this process which generates the hazardous waste. The inner surface of the can is coated with an enamel which is applied via a roller then the surface is baked to a finish. Various solvents (flammable) are used as a vehicle for the enamel. When this becomes a waste, the material is drummed and stored on site. Drum storage area is outside, on an asphalt surface, no containment of this area exists in the form of curbing.

Also generated as hazardous waste is condensate from an electrostatic precipitator on site - (ESP is on the enamel baking oven)

Although the drums were not labeled in accordance with 262.30 through 34 (pretransportation requirements) they were labled ~~with the words~~ as flammable waste and were numbered, a separate log is kept in which these drum numbers are cross referenced as to their contents.

Describe the activities that result in the generation of hazardous waste.

See Summary

Identify the hazardous waste located on site, and estimate the approximate quantities of each. (Identify Waste Codes)

82, 55 gal. drums of waste solvent

D001

F017

Is there reason to believe that the facility has hazardous waste on-site?

a. If yes, what leads you to believe it is hazardous waste? Check appropriate boxes:

☒ Company admits that its waste is hazardous during the inspection.

☒ Company admitted the waste is hazardous in its RCRA notification and/or Part A Permit Application.

☐ The waste material is listed in the regulations as a hazardous waste from a nonspecific source (§261.31)

☐ The waste material is listed in the regulations as a hazardous waste from a specific source (§261.32)

☐ The material or product is listed in the regulations as a discarded commercial chemical product (§261.33)

☐ Testing has shown characteristics of ignitability, corrosivity, reactivity or extraction procedure toxicity, or has revealed hazardous constituents (please attach analysis report)

☐ Company is unsure but there is reason to believe that waste materials are hazardous. (Explain)

GENERATOR INSPECTION CHECKLIST

	YES	NO	N/A
40 CFR 262 Subpart A-General			
262.11 - Hazardous waste determination			
1) Did the generator test its waste to determine whether it is hazardous?		X	
Is the waste hazardous?	X		
2) Is the generator determining that its waste exhibits a hazardous waste characteristic(s) based on its knowledge of the material(s) or processes used?	X		
40 CFR 262 Subpart B-The Manifest			
Has hazardous waste been shipped off-site since November 19, 1980?	X		
If yes, approximately how many shipments, off-site, have been made and describe the approximate size of an average shipment made on a monthly basis. If facility is a small quantity generator, please explain.	Approx 14 Approx 80 55 gal drums		
262.21 Does each manifest (or representative sample) have the following information? Please circle the missing elements.			
— a manifest document number?	X		
— the generators name, mailing address, telephone number and EPA I.D. Number?	X		
— the transporters name and EPA I.D. Number?	X		
— the name, address and EPA ID Number of the designated facility?	X		
— a description of the wastes (DOT)?	X		
— the total quantity of each hazardous waste by units of weight or volume, and the type and number of containers as loaded into or onto the transport vehicle?	X		
— a certification that the materials are properly classified, described, package, marked and labeled, and are in proper condition for transportation under regulations of the DOT and EPA?	X		
(obtain a copy of the incomplete manifests)			
40 CFR 262 - Subpart D - Recordkeeping and Reporting			
262.40 Has the generator maintained facility records since Nov. 19, 1980? (manifest, exception report and waste analysis)	X		
262.42 Has the generator received signed copies (from the TSD facility) of all the manifests for waste shipped off-site more than 35 days ago?	X		
If not, have Exception Reports been submitted to EPA covering any of these shipments made more than 45 days ago?			X

	YES	NO	N/A
40 CFR 262 - Subpart C - Pretransportation Requirements			
262.30-33 Before transporting or offering hazardous waste for transportation off-site does the generator:			
1) Package the waste in accordance with applicable DOT regulations (i.e., 49 CFR Parts 173, 178 & 179)	X		
2) Label each package according to DOT (i.e., 49 CFR 172)	X		
3) Mark each package according to DOT (i.e., 49 CFR 172)	X		
4) Mark each container of 110 gallons or less with the words "Hazardous Waste - Federal Law Prohibits Improper Disposal. If found, contact the nearest police or public safety authority or the U.S. EPA." and include the generators name, address and manifest document number. (i.e., 49 CFR 172.304)	X		

262.34 **Accumulation Time**

1) How is waste accumulated on-site?

- [X] Containers
- [ ] Tanks
- [ ] Surface impoundments (complete BMP checklist)
- [ ] Piles (complete BMP checklist)

2) Is waste accumulated for more than 90 days? If yes, complete BMP checklist		X	
3) Is each container clearly dated with each period of accumulation so as to be visible for inspection?	[redacted]	X	
4) Is each container or tank marked or labeled with the words "hazardous waste" or in compliance with the DOT labeling requirements?	[redacted]	X	

info on this kept in separate log, cross referenced by manifest numbers on dr

STOP HERE IF THE HAZARDOUS WASTE MGT FACILITY (TSD) CHECKLIST IS FILLED OUT

262.34 - SHORT TERM ACCUMULATION STANDARDS

(For generators who accumulate waste in tanks or containers for 90 days or less)

40 CFR 265 - Subpart I Containers	YES	NO	N/A
265.170 - What type of containers are used for storage. Describe the size, type and quantity and nature of waste (e.g., 12 fifty-five gallon drums of waste acetone). Two fifty five gallons of waste solvents			
265.171 - Do the containers appear to be in good condition, not in danger of leaking? If not, please describe the type, condition and number of leaking or corroded containers. Be detailed and specific.	X		
265.172 - Are hazardous waste stored in containers made of compatible materials? If not, please explain.	X		
265.173(a) - Are all containers closed except those in use?	X		
265.173(b) - Do containers appear to be properly opened, handled or stored in a manner which will minimize the risk of the container rupturing or leaking?	X		
265.174 - Is the storage area inspected at least weekly?	X		
265.176 - Are containers holding ignitable and reactive waste located at least 50 feet (15 meters) away from the facility's property line?	X		
265.177 - Are incompatible wastes stored separate from each other?			X

	YES	NO	N/A
40 CFR 265 Subpart J - Tanks			
265.190 1) What are the approximate number and size of tanks containing hazardous waste?			X
2) Identify the waste treated/stored in each tank.			
265.192 - General Operating Requirements			
1) Are the tanks maintained so that there is no evidence of past, present, or risk of future leaks?			
If no, please explain.			
2) Are there leaking tanks?			
3) Are all hazardous wastes or treatment reagents being placed in tanks compatible with the tank material so that there is no danger of ruptures, corrosion, leaks or other failures?			
4) Do uncovered tanks have at least 2 feet of freeboard or an adequate containment structure?			
5) If waste is continuously fed into a tank, is the tank equipped with a means to stop the inflow from the tank? e.g. bypass system to a standby tank			
265.194 - Inspections			
1) Is the tank(s) inspected each operating day for			
a) discharge control equipment			
b) monitoring equipment			
c) level of waste in tank			
2) Are the tanks and surrounding areas (e.g., dike) inspected weekly for leaks, corrosion or other failures?			
3) Are there underground tanks?			
If yes, how many and can they be entered for inspection?			
265.198 - Are ignitable or reactive wastes stored in a manner which protects them from a source of ignition or reaction?			
If no, please explain.			
265.199 - Does it appear that incompatible wastes are being stored separate from each other?			

	YES	NO	N/A
265.16 - Personnel Training			
1) Have facility personnel successfully completed a program of classroom instruction or on-the-job training within 6 months of having been employed?	X		
If yes, have facility personnel taken part in an annual review of training?	X		
2) Is there written documentation of the following:			
—job title for each position at the facility related to hazardous waste management and the name of the employee filling each job?	X		
—type and amount of training to be given to personnel in jobs related to hazardous waste management?	X		
—actual training or experience received by personnel?	X		
3) Are training records kept on all employees for at least 3 years?	X		
40 CFR 265 - Subpart C - Preparedness and Prevention			
265.32 Does the facility comply with preparedness and prevention requirements including maintaining:			
— an internal communications or alarm system?	X		
— a telephone or other device to summon emergency assistance from local authorities?	X		
— portable fire equipment?	X		
— water at adequate volume and pressure to supply water hose streams, foam producing equipment, etc.	X		
265.33 Is equipment tested and maintained?	X		
265.34 Is there immediate access to communications or alarm systems during handling of hazardous waste?		X	
265.35 Adequate aisle space?	X		
If no, please explain storage pattern.			
In your opinion, do the types of waste on-site require all of the above procedures, or are some not needed: Explain.	X		
40 CFR 265 - Subpart D - Contingency Plan and Emergency Procedures			
Does the facility have a written contingency plan for emergency procedures designed to deal with fires, explosions or any unplanned release of hazardous waste?	X		
1) Does the plan describe arrangements made with the local authorities?	X		
2) Has the contingency plan been submitted to the local authorities?	X		
3) Does the plan list names, addresses and phone numbers of Emergency Coordinators?	X		
4) Does the plan have a list of what emergency equipment is available?	X		
5) Is there a provision for evacuating facility personnel?	X		
6) Was there an emergency coordinator present or on call at the time of the inspection?	X		

Transporter Inspection Report Form

40 CFR Part 263 Transporter Standards	YES	NO	N/A
263.10 - Does the transporter carry hazardous waste?	___	___	___
263.12 - Does the transporter store hazardous waste at a transfer facility - if yes, how long? _____10 days or less _____more than 10 days (complete TSD form)	___	___	___
263.20 - Manifest System			
1) Does the transporter have a copy for each manifest shipment of hazardous waste?	___	___	___
2) Does a representative portion of the manifests show the following information (if no, circle the missing information)	___	___	___
o Generator's name, address, telephone and EPA I.D. numbers, signature and date of signature	___	___	___
o Transporter's name, EPA I.D. number, signature and date of signature	___	___	___
o TSDF's name, address and EPA I.D. Number	___	___	___
and either the signature and date of the TSDF or the name, EPA I.D., signature and date of the next transporter.	___	___	___
o Manifest Document number	___	___	___
o Proper DOT shipping description	___	___	___
o Quantity & type of containers	___	___	___
(If no, to any of the above obtain copies of incomplete manifests).			
3) Based on available information, do all manifests conform to the hazardous waste shipments made? If no, explain	___	___	___
262.22 - Have records been kept since November 19, 1980?	___	___	___
263.30 - Has there ever been a spill or discharge of hazardous waste during transportation?	___	___	___
If yes, was the incident report submitted to DOT? (obtain copy of the report)	___	___	___
263.31 - If there was any spill or discharge of hazardous waste, was it cleaned up? If no, explain.	___	___	___

General Comments:

HAZARDOUS WASTE MANAGEMENT FACILITY CHECK LIST
(Facilities Subject to 40 CFR 265 Standards)

	YES	NO	N/A
40 CFR Part 265 Subpart B General Facility Standards			
265.13-General Waste Analysis			
1) Is there a detailed chemical and physical anaylsis of a representative sample of the waste or each waste? (At a minimum this analysis must contain all the information necessary for proper management of the waste)	X		
2) Does the character of the waste handled at the facility change from day to day, week to week, etc., thus requiring frequent testing? You may check only one			
Waste characteristics vary			
All waste are basically the same	X		
Company treats all waste as hazardous			
3) Is there a written waste analysis plan at the facility?	X		
Does it contain the following:			
a) Parameters for each waste to be analyzed and the rationale for the selection of these parameters.	X		
b) Test methods used to test these parameters.	X		
c) Sampling methods to obtain a representative sample of the waste to be analyzed.	X		
d) Frequency of repeated analysis to ensure accurate and current information.	X		
4) Does hazardous waste come to this facility from an outside source? e.g. another generator.		X	
5) If waste comes from an outside source, are there procedures in the plan to insure that waste received conforms to the accompanying manifest?			X
265.14-Security			
1) Is there: a) a 24-hour surveillance system? or, b) a suitable barrier which completely surrounds the active portion of this facility?	X		
2) Are there "Danger-Unauthorized Personnel Keep Out" signs posted at each entrance to the facility?			
If no, explain what measures are taken for security. Guards at each entrance			
265.15 - General Inspections Requirements			
1) Does the facility have a written inspection schedule?	X		
2) Does the schedule identify the types of problems to be looked for and the frequency of inspections?	X		
3) Does the owner/operator record inspections in a log?	X		
4) Is there evidence that problems reported in the inspection log have been remedied?			X
If no, please explain. No problems noted			

265.16 - Personnel Training

	YES	NO	N/A
1) Have facility personnel successfully completed a program of classroom instruction or on-the-job training within 6 months of having been employed?	X	—	—
If yes, have facility personnel taken part in an annual review of training?	X	—	—
2) Is there written documentation of the following:			
—job title for each position at the facility related to hazardous waste management and the name of the employee filling each job?	X	—	—
—type and amount of training to be given to personnel in jobs related to hazardous waste management?	X	—	—
—actual training or experience received by personnel?	X	—	—
3) Are training records kept on all employees for at least 3 years?	X	—	—

265.17-General Requirements for Ignitable, Reactive or Incompatible Wastes

1) Are there ignitable, reactive or incompatible waste on site?	X	—	—
If yes, what are the approximate types and quantities and location of the waste.	Approx 80, 55 gal drums flammable solvents on-site		
2) Have precautions been taken to prevent accidental ignition or reaction of ignitable or reactive waste?	X	—	—
If no, please explain.			
3) In your opinion, are proper precautions taken so that these wastes do not:			
— generate extreme heat or pressure, fire or explosion, or violent reaction?	X	—	—
— produce uncontrolled toxic mist, fumes, dusts or gases in sufficient quantities to pose a risk of fire or explosions?	X	—	—
— damage the structural integrity of the device or facility containing the waste?	X	—	— although drums are stored outside unprotected from rain, accumulation time is short.
— threaten human health or the environment?	X	—	—

40 CFR 265 - Subpart C - Preparedness and Prevention

	YES	NO	N/A
265.32 Does the facility comply with preparedness and prevention requirements including maintaining:			
— an internal communications or alarm system?	X		
— a telephone or other device to summon emergency assistance from local authorities?	X		
— portable fire equipment?	X		
— water at adequate volume and pressure to supply water hose streams, foam producing equipment, etc.	X		
265.33 Is equipment tested and maintained?	X		
265.34 Is there immediate access to communications or alarm systems during handling of hazardous waste?		X	
265.35 Adequate aisle space?	X		
If no, please explain storage pattern.			
In your opinion, do the types of waste on-site require all of the above procedures, or are some not needed: Explain.	X		

40 CFR 265 - Subpart D - Contingency Plan and Emergency Procedures

Does the facility have a written contingency plan for emergency procedures designed to deal with fires, explosions or any unplanned release of hazardous waste?	X		
1) Does the plan describe arrangements made with the local authorities?	X		
2) Has the contingency plan been submitted to the local authorities?	X		
3) Does the plan list names, addresses and phone numbers of Emergency Coordinators?	X		
4) Does the plan have a list of what emergency equipment is available?	X		
5) Is there a provision for evacuating facility personnel?	X		
6) Was there an emergency coordinator present or on call at the time of the inspection?	X		

40 CFR 265 Subpart E-Manifest System, Recordkeeping and Reporting

265.71 - Use of the Manifest

1) Has the facility received hazardous waste from an off-site source since November 19, 1980?		X	
If no, skip to 265.73 - Operating Record			
2) If yes, does it appear that the facility has a copy of a manifest for each hazardous waste load received?			
If not, please explain.			

	YES	NO	N/A
3) How many post-November 19 manifests does the facility have? (Estimate if the number is large)			
4) Does each manifest have the following information? (circle missing information)			
— a manifest document number?	—	—	—
— the generators name, mailing address, telephone number and EPA I.D. #?	—	—	—
— the transporters name and EPA I.D. Number?	—	—	—
— the TSD name, address, telephone number & EPA I.D. Number?	—	—	—
— a description of the waste (DOT)?	—	—	—
— the total quantity of each hazardous waste by units of weight or volume, and the type and number of containers as loaded; into or onto the transport vehicle?	—	—	—
— a certification that the materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation under regulations of the DOT and EPA?	—	—	—
(Obtain a copy of the incomplete manifests)			

265.72 - Manifest Discrepancies

Have there been significant discrepancies between the quantity and type of waste received and the waste identified on the manifest?	—	—	—
Describe unreconciled descrepancies.			

265.73 - Operating Record

1) Does the facility keep an operating record?	✓	—	—
2) Does the record contain the following information:			
a) Description and quantity of waste on-site and the method(s) and date(s) of its Treatments, Storage & Disposal?	✓	—	—
b) The location and quantity of each hazardous waste at each location?	✓	—	—
c) Records and results of waste analysis and trial tests performed and identified in the waste analysis plan?	—	—	✓
d) Summary reports and details of all incidents that require implementing the contingency plan.			
e) Records and results of inspections for the past 3 years or November 19, 1980 which ever is less?	✓	—	—
f) Monitoring, testing or analytical data where required for:			
Groundwater, Land Treatment, Incinerators, and Thermal Treatment?	—	—	✓

wastes remain the same - Inspectors determination based on product knowledge

265.76 - Unmanifested Waste Report

Has the facility accepted hazardous waste from off-site sources without a manifest?	—	✓	—
If yes, has the facility submitted an unmanifested waste report?	—	—	✓

40 CFR 265 Subpart F - Groundwater Monitoring	YES	NO	N/A
(Applies only to surface impoundments, landfills and/or land treatment facilities.)			
Is a groundwater monitoring plan available at the facility?			X
If yes, please fill out the appropriate Groundwater Monitoring Questionaire and attach to this report.			
40 CFR 265 Subpart G - Closure and Post-Closure			
265.111 Closure Performance Standard			
Have any portions of the facility been closed since November 19, 1980?			
If yes, please explain			
265.112 - Closure Plan			
Does the facility have a written closure plan? (Applies to all types of TSD facilities)			X
If yes, does the written plan include:			
1. A description of how and when the facility will be partially (if applicable) and ultimately closed?			
2. An estimate of the maximum inventory of wastes in storage or treatment at any time during the life of the facility?			
3. A description of the steps necessary to decontaminate facility equipment during closure?			
4. A schedule for final closure including the anticipated date when waste will no longer be received and when final closure will be completed?			
5. Does the owner/operator have a written estimate of of the cost of closing the facility?			
If yes, what is it? ($)			
265.118 - Post Closure Plan			
Does the facility have a written post-closure plan? (Applies only to disposal facilities)			
If yes, Does the Plan:			
1. Identify the activities which will be carried on after closure and the frequency of these activities?			
2. Include a description of planned groundwater monitoring activities and their frequency during post-closure?			
3. Include a description of planned maintenance activities and frequency to insure integrity of final cover during post-closure?			
4. Include the name, address and phone number of a person or office to contact during post-closure?			
5. Does the owner/operator have a written estimate of the cost of post-closure for the facility?			
If yes, what is it? ($)			

N/A as facility is in process of withdrawing TSDF status (see attached letter)

Please circle all appppropriate activities and answer questions on indicated pages for all activities circled.

Storage	Treatment	Disposal
Container - pg 6	Tank - pg 7	Landfill - pg 11
Tank, above ground-pg 7	Surface Impoundment-pg 8	Land Treatment - pg 10
Tank, below ground-pg 7	Incineration - pg 12	Surface Impoundments - pg 8
Surface Impoundments-pg 8	Thermal Treatment- pg 12	Other_____
Waste Piles - pg 9	Land Treatment - pg 10	
Other_____	Chemical, Physical and Biological Treatment - pg 13	
	Other_____	

	YES	NO	N/A
40 CFR 265 - Subpart I - Containers			
1) - What type of containers are used for storage. Describe the size, type, quantity and nature of waste (e.g. 12 fifty-five gallon drums of waste acetone) 62 fifty five gal drums flammable solvents			
2) - Is there a containment system for spills, leaks and precipitation? If yes, describe.		X	
265.171 - Do the containers appear to be in good condition, not in danger of leaking? If not, please describe the type, condition and number of leaking or corroded containers. Be detailed and specific.	X		
265.172 - Are hazardous waste stored in containers made of compatible materials? If not, please explain.	X		
265.173(a) - Are all containers closed except those in use?	X		
265.173(b) - Do containers appear to be properly opened, handled or stored in a manner which will minimize the risk of the container rupturing or leaking?	X		(excepting some drums which were not on pallets)
265.174 - Is the storage area inspected at least weekly?	X		
265.176 - Are containers holding ignitable and reactive waste located at least 50 feet (15 meters) away from the facility's property line?	X		
265.177 - Are incompatible wastes stored separate from each other? If no, explain			X

40 CFR 265 Subpart J - Tanks	YES	NO	N/A
265.190 1) What are the approximate number and size of tanks containing hazardous waste?			
2) Identify the waste treated/stored in each tank.			
265.192 - General Operating Requirements			
1) Are the tanks maintained so that there is no evidence of past, present, or risk of future leaks?			
If no, please explain.			
2) Are there leaking tanks?			
3) Are all hazardous wastes or treatment reagents being placed in tanks compatible with the tank material so that there is no danger of ruptures, corrosion, leaks or other failures?			
4) Do uncovered tanks have at least 2 feet of freeboard or an adequate containment structure?			
5) If waste is continuously fed into a tank, is the tank equipped with a means to stop the inflow from the tank? e.g. bypass system to a standby tank			
265.194 - Inspections			
1) Is the tank(s) inspected each operating day for a) discharge control equipment b) monitoring equipment c) level of waste in tank			
2) Are the tanks and surrounding areas (e.g., dike) inspected weekly for leaks, corrosion or other failures?			
3) Are there underground tanks?			
If yes, how many and can they be entered for inspection?			
265.198 - Are ignitable or reactive wastes stored in a manner which protects them from a source of ignition or reaction?			
If no, please explain.			
265.199 - Does it appear that incompatible wastes are being stored separate from each other?			

40 CFR 265 Subpart K - Surface Impoundments	YES	NO	N/A
Describe the design and operating features of the surface impoundment to prevent ground water contaimination (e.g., liner leachate collection system).			
265.220 - Give the approximate size of surface impoundments (gallons or cubic feet). Please specify the types of wastes stored and treated.			
265.222 - Is there at least 2 feet of freeboard in the impoundment?	___	___	___
265.223 - Do all earthen dikes have a protective cover to preserve their structural integrity?	___	___	___
If yes, please specify the type of covering.			
265.226 - 1) Is the free board level inspected daily?	___	___	___
2) Are the dikes surrounding the surface impoundment inspected for leaks, deterioration or failures inspected weekly?	___	___	___
265.229 - 1) Are any ignitable or reactive wastes placed in the impoundment?	___	___	___
2) If yes, is the waste treated immediately after placement in the impoundment to render the waste non-active and/or non-ignitable?	___	___	___
3) If no, to (2) explain.			
265.230 - Are incompatible wastes placed in the impoundment?	___	___	___
If yes, explain.			

40 CFR 265 Subpart L - Waste Piles

YES NO N/A

265.250 - How many waste piles are on-site and approximately how large are they? (Please indicate size and height and types of wastes in piles.)

265.251 - Is the waste pile protected from wind erosion? ___ ___ ___

a) Does it appear to need such protection? ___ ___ ___

b) Explain what type of protection does exist.

265.253 Containment

1) Is leachate run-off from the waste piles a hazardous waste? If no, skip down to 265.256. ___ ___ ___

2) Is the pile placed on an impermeable base? ___ ___ ___

3) Is run-on diverted away from the pile? ___ ___ ___

4) Is the leachate and run-off collected and treated? ___ ___ ___

If no to any of the above questions above then:

5) Is the pile protected from precipitation and run-on? ___ ___ ___

6) Are wastes containing free liquids placed in the pile? ___ ___ ___

265.256 - 1) Are ignitable or reactive wastes placed on the pile? If no, skip to §265.257 ___ ___ ___

2) Is the ignitable or reactive waste added to existing pile resulting in it no longer meeting the definition of ignitable and reactive? If no, explain. ___ ___ ___

3) Is the waste protected from any materials or condition that may cause it to ignite or react? If no, explain. ___ ___ ___

265.257 - Does it appear that a pile of incompatible wastes is being stored separate from other wastes or materials, or protected from them by means of a dike, berm, wall or other device? If no, explain. ___ ___ ___

40 CFR 265 Subpart M - Land Treatment

265.270 - Identify the types of waste and the size of the land treatment area?

	YES	NO	N/A
265.272 - General Operating Requirements			
1) Can the facility operator demonstrate that the hazardous waste has been made less or non-hazardous by biological degradation or chemical reactions occurring in or on the soil?	—	—	—
Please explain how.			
2) Is run-on diverted from the active portions of the land treatment facility?	—	—	—
3) Is run-off from the active portions of the facility collected?	—	—	—
If yes, is the run-off a hazardous waste?	—	—	—
265.276 - Food Chain Crops			
1) Are food chain crops being grown on the facility property? If yes, can the facility operator document that arsenic lead and mercury:	—	—	—
- will not be transferred to the crop or ingested by food-chain animals or	—	—	—
- will not occur in greater concentrations in the crops grown on the land treatment facility than in the same crops grown on the untreated soils.	—	—	—
2) Has notification of the growing of food chain crops been made to the Regional Administrator?	—	—	—
265.278 - Is there a written and implemented plan for unsaturated zone monitoring?	—	—	—
Make copy for office review.			
265.279 - Are there records of the application dates, application rates, quantities and location of each hazardous waste placed at the facility?	—	—	—
265.281 - Is ignitable or reactive waste immediately incorporated into the soil so that the resulting waste no longer meets that definition?	—	—	—
If not, please explain.			
265.282 - Are incompatible waste placed in separate land treatment areas?	—	—	—
If no, please explain.			

40 CFR 265 Subpart N - Landfills

	YES	NO	N/A
265.300 - Identify the types of waste and size of the landfill.			
265.302 - General Operating Requirements			
1) Is run-on diverted away from the active portions of the landfill?	___	___	___
2) Is run-off from active portions of the landfill collected?	___	___	___
3) Is waste which is subject to wind dispersal controlled?	___	___	___
Please explain how.			
265.309 - Does the owner/operator maintain a map with:			
1) The exact location and dimensions of each cell?	___	___	___
2) The contents of each cell and approximate location of each hazardous waste type?	___	___	___
265.312 - Is ignitable or reactive waste treated so that it is not ignitable or reactive before being place in the landfill?	___	___	___
Explain how you know.			
265.313 - Are precautions taken to ensure that incompatible waste are not placed in the same landfill cell?	___	___	___
If no, please explain.			
265.314 Special Requirements for Liquid Waste			
1) Are bulk or non-containerized wastes containing free liquids placed in the landfill?	___	___	___
If yes,			
a) Does the landfill have a liner which is chemically and physically resistant to the added liquid? or	___	___	___
b) Is the waste treated and stabilized so that free liquids are no longer present?	___	___	___
2) Are containers holding liquid waste or waste containing free liquids placed in the landfill?	___	___	___
Please describe the types and contents of such containers placed in the landfill.			
265.315 - Are empty containers placed in the landfill crushed flat, shredded or similarly reduced in volume before they are buried ?	___	___	___
265.316 - Are small containers of hazardous waste in overpacked drums placed in the landfill?	___	___	___
If yes, please describe precautions taken to prevent the release of the waste			

40 CFR 265 Subpart O & P - Incinerator and Thermal Treatment — YES NO N/A

1) What type of incinerator or thermal treatment is at the site (e.g waterwall incinerator, boiler, fluidized bed, etc.)

2) List the types and quantities of HW incinerated or thermally treated.

3) Is the residue from the incinerator thermal treatment unit a hazardous waste? — — —

4) What types of air pollution control devices (if any) are installed in the incinerator/or thermal treatment unit?

5) Is energy recovered from the process? If yes, describe. — — —

6) What is the destruction and removal efficiency for the organic hazardous waste constituents?

265.341 and 265.375 - Does the operating record include additional analysis' to determine types of pollutants which might be emitted including:

- heating value of the waste? — — —
- halogen and sulfur content? — — —
- concentrations of lead and mercury? — — —

If no to any of the above questions is there justification and documentation? — — —

265.345 and 265.373 If operating, does it appear the incinerator/or thermal treatment unit is operating at steady state for conditions of operation, including temperature and air flow? — — —

265.347 and 265.377 - Monitoring and Inspection

1) Are existing instruments relating to combustion and emission controls monitored every 15 minutes? — — —

If no, explain

2) Does the incinerator/thermal treatment have all the following instruments for measuring: wastefeed, auxiliary fuel feed air flow, incinerator temperature scrubber flow, and scrubber pH? (Circle missing instruments) — — —

If no, explain.

3) Is the stack plume observed visually at least hourly for opacity and color? — — —

4) Are there any signs of leaks, spill and fugitive emissions associated with the pumps, valves, conveyors, pipes etc? If yes, describe. — — —

5) Are all emergency shutdown controls and system alarms checked to assure proper operation? — — —

6) Is there any reason to believe the incinerator is being operated improperly? i.e., steady state conditions are not maintained. If yes, explain. — — —

7) Is the incinerator/thermal treatment inspected daily?

	YES	NO	N/A
265.382 Is there open burning of hazardous waste?	___	___	___
a) If yes, what is being burned? (Only burning or detonation of explosives is permitted)			
b) If open burning or detonation of explosives is taking place approximately what is the distance from the open burning or detonation to the property of others?			

40 CFR 265 Subpart Q - Chemical, Physical and Biological Treatment (other than in tanks, surface impoundments or land treatment facilities)

1) Describe the treatment system at this facility and the the types of wastes treated.

265.401 - Does the treatment process system show any signs of ruptures, leaks or corrosion?	___	___	___
If yes, describe.			
265.401 - Is there a means to stop the inflow of continuously-fed hazardous wastes?	___	___	___
265.403 - Inspections			
1) Is the discharge control safety equipment (e.g. waste feed cut-off systems, by-pass systems, drainage systems and pressure relief systems) in good working order?	___	___	___
Are they inspected at least once each operation day?	___	___	___
2) Does the data gathered from the monitoring equipment (e.g., pressure and temperature gauges) show treatment process is operating according to design?	___	___	___
Is data gathered at least once each operating day?	___	___	___
3) Are construction materials of the treatment process inspected at least weekly to detect corrosion or leaking of fixtures and seams?	___	___	___
4) Are the discharge confinement structures, (e.g. dikes) immediately surrounding the treatment unit inspected at least weekly to detect erosion or obvious signs of leakage (e.g. wet spots or dead vegetation?	___	___	___
265.405 - Are ignitable or reactive waste fed into the waste treatment system treated or protected from any material or or conditions which may cause it to ignite or react?	___	___	___
If yes, explain how.			
265.406 - Are the incompatible wastes placed in the same treatment process?	___	___	___
If yes, please explain.			

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WASTE MANAGEMENT
32 E. Hanover St., CN 027, Trenton, N.J. 08625

JACK STANTON
DIRECTOR

LINO F. PEREIRA
DEPUTY DIRECTOR

03 MAR 1983

Campbell Soup Company
Brown, Arthur S Mgr Utilit
100 Market Street
Camden, NJ 08101

RE: Facility Operating Status

Dear Sir:

The Bureau of Hazardous Waste Engineering has reviewed your company's response to the Notice of Violation, Failure to Submit Annual Report. The Bureau finds that the response contains adequate information to determine the operating status of this facility with respect to N.J.A.C. 7:26-1 et seq., the New Jersey Hazardous Waste Management Regulations. The Bureau has determined that the company's hazardous waste treatment, storage or disposal facility as delineated in the company's RCRA Part A application and identified by the following EPA ID Number:

EPA ID NO. NJD003951951

has been excluded from regulations under N.J.A.C. 7:26-1.1 et seq. because your facility accumulates hazardous waste on-site for less than 90 days. This exclusion classifies your facility solely as a generator provided the following conditions are complied with:

1. All such waste is, within 90 days or less, shipped off-site to an authorized facility or placed in an on-site authorized facility, as defined at N.J.A.C. 7:26-1.4.

2. The waste is placed in containers which meet the standards of N.J.A.C. 7:26-7.2 and are managed in accordance with N.J.A.C. 7:26-9.4(d).

3. The date upon which each period of accumulation begins is clearly marked and visible for inspection on each container.

4. The generator complies with the requirements for owners and operators of N.J.A.C. 7:26-9.6 and 9.7 concerning preparedness and prevention, contingency plans and emergency procedures as well as N.J.A.C. 7:26-9.4(g) concerning personnel training.

5. For bulk accumulation of dry hazardous waste materials, the waste pile is managed according to the following:

(i) The waste pile is no larger than 200 cubic yards; and

(ii) The pile shall be placed on an impermeable base that is compatible with the waste; and

(iii) Run-on shall be diverted away from the pile; and

(iv) Any leachate and run-off from the pile must be collected and managed as a hazardous waste.

This written acknowledgement of the exclusion of the above identified facility from N.J.A.C. 7:26-1 et seq. is based expressly on the review of the aforementioned correspondence. This letter makes no claim as to the extent and physical condition of the actual hazardous waste activities occuring at the site mentioned above.

Your company's hazardous waste facility above is no longer included in DEP's list of "existing facilities" (see N.J.A.C. 7:26-1.4 and 12.3) and therefore does not need to conform with the interim operating requirments of N.J.A.C. 7:26-1 et seq. for "existing facilities" which would include the TSD facility annual report. It is the company's responsibility to operate within the conditions listed above. To operate a hazardous waste facility without prior approval from the DEP is a violation of the Solid Waste Management Act N.J.S.A. 13:1E-1 et seq.

As a result of the conclusions previously made, the Notice of Violation entitled "Failure to Submit Annual Report" signed by Mr. David Shotwell is rescinded and need not be complied with.

If you have any questions on this matter, please call my office at (609) 292-9880.

Very truly yours,

Frank Coolick

Frank Coolick, Chief
Bureau of Hazardous Waste Engineering

FC:jb

cc Dave Shotwell
NJDEP, Division of Waste Management

Tom Taccone
USEPA, Region II

Campbell SOUP Company

CAMDEN, NEW JERSEY 08101

December 15, 1982

New Jersey Department of
Environmental Protection
Division of Waste Management
32 East Hanover Street
CN027
Trenton, NJ 08628

Gentlemen:

Re: Permit Applications Withdrawal Letter
Facility: Campbell Soup Company Facilities
at 100 Market Street, Camden, NJ
08101 (USEPA Id. No. NJD003951951)
and at Campbell Place, Camden, NJ
08101 (USEPA Id. No. NJD001288042)

Please consider this letter as a request to withdraw the above-referenced facilities' Part A hazardous waste permit applications.

The permit applications were "protective" or precautionary in nature, to preserve the facilities' "interim status". Since November 19, 1980, the facilities have not, in fact, treated, stored for more than 90 days, or disposed of hazardous waste. In other words, with reference to the above facilities, we have not at any time since November 19, 1980 to date been the "owner" or "operator" of a "hazardous waste treatment, storage, or disposal facility" as set forth in 40 C.F.R. Part 265 of the U.S. Environmental Protection Agency's regulations issued under the federal Resource Conservation and Recovery Act or of such a type facility as set forth in the comparable N.J. regulations, Subchapter 9 - "Requirements for Hazardous Waste Facilities", of the N.J. Administrative Code, Title 7, Chapter 26.

For the above reasons, we respectfully submit that the filing of closure plans with our withdrawal requests is not required, and that other closure or post-closure provisions are also inapplicable.

Very truly yours,

CAMPBELL SOUP COMPANY

M. A. Zimmerman
Vice President -
General Plant Manager -
Canned Foods

cc: Air and Waste Management
Division
USEPA - Region II
26 Federal Plaza
New York, NY 10278

Certified - RRR

REFERENCE NO. 2

APPENDIX II

Please print or type with ELITE type (12 characters/inch) in the unshaded areas only.

Form Approved OMB No. 158-S79016
GSA No. 0246-EPA-OT

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTIFICATION OF HAZARDOUS WASTE ACTIVITY

INSTRUCTIONS: If you received a preprinted label, affix it in the space at left. If any of the information on the label is incorrect, draw a line through it and supply the correct information in the appropriate section below. If the label is complete and correct, leave items I, II, and III below blank. If you did not receive a preprinted label, complete all items. "Installation" means a single site where hazardous waste is generated, treated, stored and/or disposed of, or a transporter's principal place of business. Please refer to the INSTRUCTIONS FOR FILING NOTIFICATION before completing this form. The information requested herein is required by law (Section 3010 of the Resource Conservation and Recovery Act).

INSTALLATION'S EPA I.D. NO.	Nonassigned
I. NAME OF INSTALLATION	Campbell Soup Company
II. INSTALLATION MAILING ADDRESS	100 Market Street Camden, N. J. 08101
	PLEASE PLACE LABEL IN THIS SPACE
III. LOCATION OF INSTALLATION	Campbell Soup Company 100 Market Street Camden, N. J. 08101

DETACH

FOR OFFICIAL USE ONLY

COMMENTS

INSTALLATION'S EPA I.D. NUMBER | APPROVED | DATE RECEIVED (yr., mo., & day)

I. NAME OF INSTALLATION

Campbell Soup Company

II. INSTALLATION MAILING ADDRESS

STREET OR P.O. BOX: 100 Market Street

CITY OR TOWN: Camden ~~New Jersey~~ | ST.: NJ | ZIP CODE: 08101

III. LOCATION OF INSTALLATION

STREET OR ROUTE NUMBER: 100 Market Street

CITY OR TOWN: Camden ~~New Jersey~~ | ST.: NJ | ZIP CODE: 08101

IV. INSTALLATION CONTACT

NAME AND TITLE (last, first, & job title): Brown Arthur Mgr Util Distr | PHONE NO. (area code & no.): 609-964-4000

V. OWNERSHIP

A. NAME OF INSTALLATION'S LEGAL OWNER: Campbell Soup Company

B. TYPE OF OWNERSHIP (enter the appropriate letter into box): M

F = FEDERAL
M = NON-FEDERAL

VI. TYPE OF HAZARDOUS WASTE ACTIVITY (enter "X" in the appropriate box(es))

- [X] A. GENERATION
- [ ] B. TRANSPORTATION (complete Item VII)
- [X] C. TREAT/STORE/DISPOSE
- [ ] D. UNDERGROUND INJECTION

VII. MODE OF TRANSPORTATION (transporters only – enter "X" in the appropriate box(es))

- [ ] A. AIR
- [ ] B. RAIL
- [ ] C. HIGHWAY
- [ ] D. WATER
- [ ] E. OTHER (specify)

VIII. FIRST OR SUBSEQUENT NOTIFICATION

Mark "X" in the appropriate box to indicate whether this is your installation's first notification of hazardous waste activity or a subsequent notification. If this is not your first notification, enter your installation's EPA I.D. Number in the space provided below.

Nonassigned

C. INSTALLATION'S EPA I.D. NO.

- [X] A. FIRST NOTIFICATION
- [ ] B. SUBSEQUENT NOTIFICATION (complete Item C)

IX. DESCRIPTION OF HAZARDOUS WASTES

Please go to the reverse of this form and provide the requested information.

CONTINUE ON REVERSE

I.D. – FOR OFFICIAL USE ONLY

W N J D 0 0 3 9 5 1 9 5 1 2 1

IX. DESCRIPTION OF HAZARDOUS WASTES *(continued from front)*

A. HAZARDOUS WASTES FROM NON–SPECIFIC SOURCES. Enter the four–digit number from 40 CFR Part 261.31 for each listed hazardous waste from non–specific sources your installation handles. Use additional sheets if necessary.

1	2	3	4	5	6
7	8	9	10	11	12

B. HAZARDOUS WASTES FROM SPECIFIC SOURCES. Enter the four–digit number from 40 CFR Part 261.32 for each listed hazardous waste from specific industrial sources your installation handles. Use additional sheets if necessary.

13	14	15	16	17	18
U239	U159	U220	U161	U031	U171
19	20	21	22	23	24
25	26	27	28	29	30

C. COMMERCIAL CHEMICAL PRODUCT HAZARDOUS WASTES. Enter the four–digit number from 40 CFR Part 261.33 for each chemical substance your installation handles which may be a hazardous waste. Use additional sheets if necessary.

31	32	33	34	35	36
37	38	39	40	41	42
43	44	45	46	47	48

D. LISTED INFECTIOUS WASTES. Enter the four–digit number from 40 CFR Part 261.34 for each listed hazardous waste from hospitals, veterinary hospitals, medical and research laboratories your installation handles. Use additional sheets if necessary.

49	50	51	52	53	54

E. CHARACTERISTICS OF NON–LISTED HAZARDOUS WASTES. Mark "X" in the boxes corresponding to the characteristics of non–listed hazardous wastes your installation handles. *(See 40 CFR Parts 261.21 – 261.24.)*

- [X] 1. IGNITABLE (D001)
- [ ] 2. CORROSIVE (D002)
- [ ] 3. REACTIVE (D003)
- [ ] 4. TOXIC (D004)

X. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE	NAME & OFFICIAL TITLE *(type or print)*	DATE SIGNED
Arthur S. Brown	Arthur S. Brown Manager, Utilities Distribution	8/18/80

EPA Form 8700-12 (6-80) REVERSE

DETACH A

DETACH A

APPENDIX II

Please print or type with ELITE type (12 characters/inch) in the unshaded areas only.

Form Approved OMB No. 158-S78016
GSA No. 0246-EPA-OT

EPA — U.S. ENVIRONMENTAL PROTECTION AGENCY
NOTIFICATION OF HAZARDOUS WASTE ACTIVITY

INSTALLATION'S EPA I.D. NO.	NJD003951951
I. NAME OF INSTALLATION	Campbell Soup Company
II. INSTALLATION MAILING ADDRESS	100 Market Street Camden, N. J. 08101 PLEASE PLACE LABEL IN THIS SPACE
III. LOCATION OF INSTALLATION	Campbell Soup Company 100 Market Street Camden, N. J. 08101

INSTRUCTIONS: If you received a preprinted label, affix it in the space at left. If any of the information on the label is incorrect, draw a line through it and supply the correct information in the appropriate section below. If the label is complete and correct, leave items I, II, and III below blank. If you did not receive a preprinted label, complete all items. "Installation" means a single site where hazardous waste is generated, treated, stored and/or disposed of, or a transporter's principal place of business. Please refer to the INSTRUCTIONS FOR FILING NOTIFICATION before completing this form. The information requested herein is required by law (Section 3010 of the Resource Conservation and Recovery Act).

DETACH

FOR OFFICIAL USE ONLY

COMMENTS:

INSTALLATION'S EPA I.D. NUMBER: F

APPROVED:

DATE RECEIVED (yr., mo., & day):

I. NAME OF INSTALLATION

Campbell Soup Company

II. INSTALLATION MAILING ADDRESS

STREET OR P.O. BOX: 100 Market Street

CITY OR TOWN: Camden

ST.: New Jersey

ZIP CODE: 08101

III. LOCATION OF INSTALLATION

STREET OR ROUTE NUMBER: 100 Market Street

CITY OR TOWN: Camden

ST.: New Jersey

ZIP CODE:

IV. INSTALLATION CONTACT

NAME AND TITLE (last, first, & job title): Brown Arthur Mgr Util Distr

PHONE NO. (area code & no.): 609-964-4000

V. OWNERSHIP

A. NAME OF INSTALLATION'S LEGAL OWNER: Campbell Soup Company

B. TYPE OF OWNERSHIP (enter the appropriate letter into box): M

F = FEDERAL
M = NON-FEDERAL

VI. TYPE OF HAZARDOUS WASTE ACTIVITY (enter "X" in the appropriate box(es))

- [X] A. GENERATION
- [ ] B. TRANSPORTATION (complete item VII)
- [X] C. TREAT/STORE/DISPOSE
- [ ] D. UNDERGROUND INJECTION

VII. MODE OF TRANSPORTATION (transporters only – enter "X" in the appropriate box(es))

- [ ] A. AIR
- [ ] B. RAIL
- [ ] C. HIGHWAY
- [ ] D. WATER
- [ ] E. OTHER (specify)

VIII. FIRST OR SUBSEQUENT NOTIFICATION

Mark "X" in the appropriate box to indicate whether this is your installation's first notification of hazardous waste activity or a subsequent notification. If this is not your first notification, enter your installation's EPA I.D. Number in the space provided below.

- [X] A. FIRST NOTIFICATION
- [ ] B. SUBSEQUENT NOTIFICATION (complete item C)

C. INSTALLATION'S EPA I.D. NO.:

IX. DESCRIPTION OF HAZARDOUS WASTES

Please go to the reverse of this form and provide the requested information.

EPA Form ... (12-80)

CONTINUE ON REVERSE

I.D. – FOR OFFICIAL USE ONLY	T/A	C
W		1

IX. DESCRIPTION OF HAZARDOUS WASTES *(continued from front)*

A. HAZARDOUS WASTES FROM NON–SPECIFIC SOURCES. Enter the four–digit number from 40 CFR Part 261.31 for each listed hazardous waste from non–specific sources your installation handles. Use additional sheets if necessary.

1	2	3	4	5	6
F017					

7	8	9	10	11	12

B. HAZARDOUS WASTES FROM SPECIFIC SOURCES. Enter the four–digit number from 40 CFR Part 261.32 for each listed hazardous waste from specific industrial sources your installation handles. Use additional sheets if necessary.

13	14	15	16	17	18

19	20	21	22	23	24

25	26	27	28	29	30

C. COMMERCIAL CHEMICAL PRODUCT HAZARDOUS WASTES. Enter the four–digit number from 40 CFR Part 261.33 for each chemical substance your installation handles which may be a hazardous waste. Use additional sheets if necessary.

31	32	33	34	35	36

37	38	39	40	41	42

43	44	45	46	47	48

D. LISTED INFECTIOUS WASTES. Enter the four–digit number from 40 CFR Part 261.34 for each listed hazardous waste from hospitals, veterinary hospitals, medical and research laboratories your installation handles. Use additional sheets if necessary.

49	50	51	52	53	54

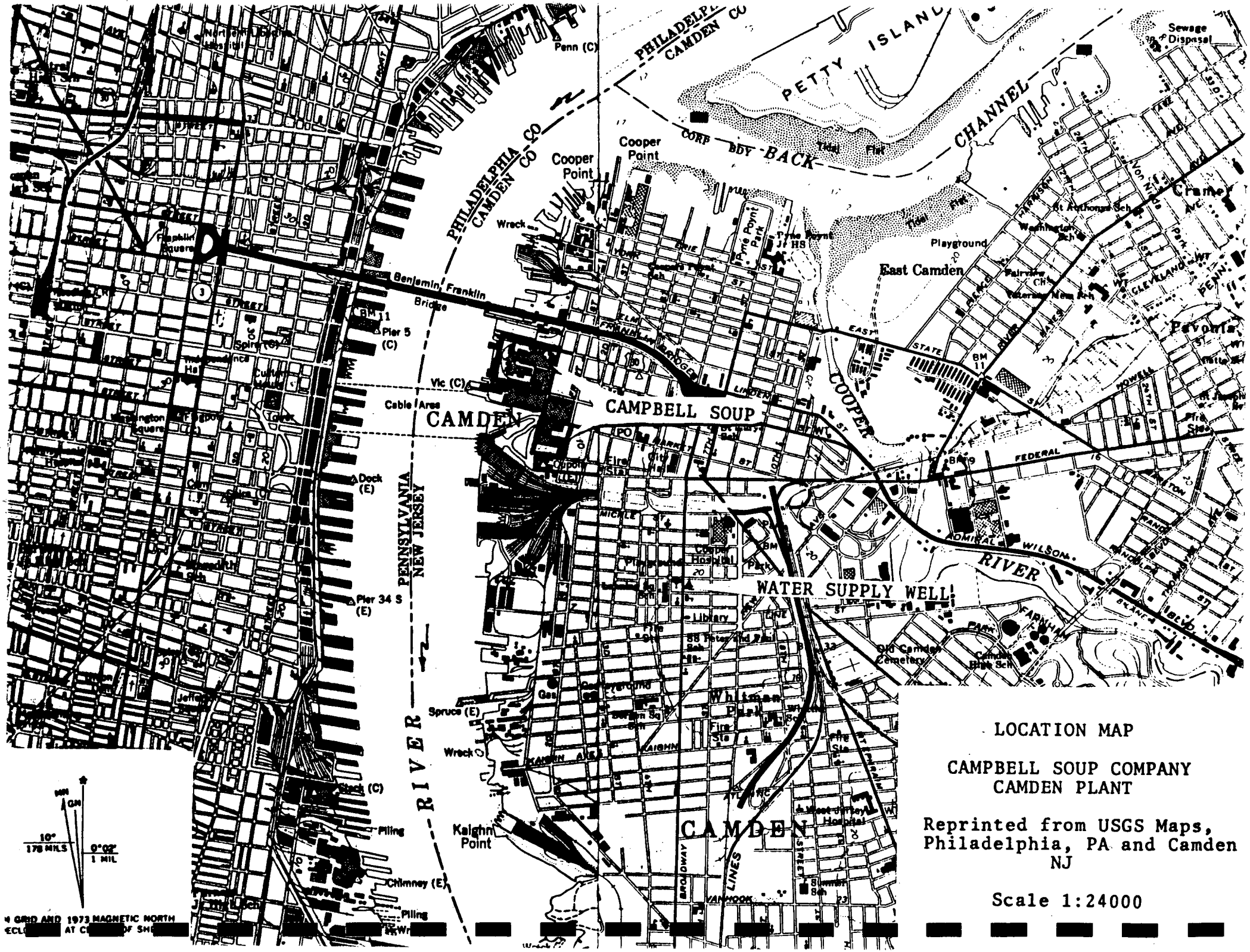
E. CHARACTERISTICS OF NON–LISTED HAZARDOUS WASTES. Mark "X" in the boxes corresponding to the characteristics of non–listed hazardous wastes your installation handles. *(See 40 CFR Parts 261.21 – 261.24.)*

- [X] 1. IGNITABLE (D001)
- [ ] 2. CORROSIVE (D002)
- [ ] 3. REACTIVE (D003)
- [X] 4. TOXIC (D000)

X. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE	NAME & OFFICIAL TITLE *(type or print)*	DATE SIGNED
[signature]	C. W. Hatfield Plant Manager	8/18/80 Amended

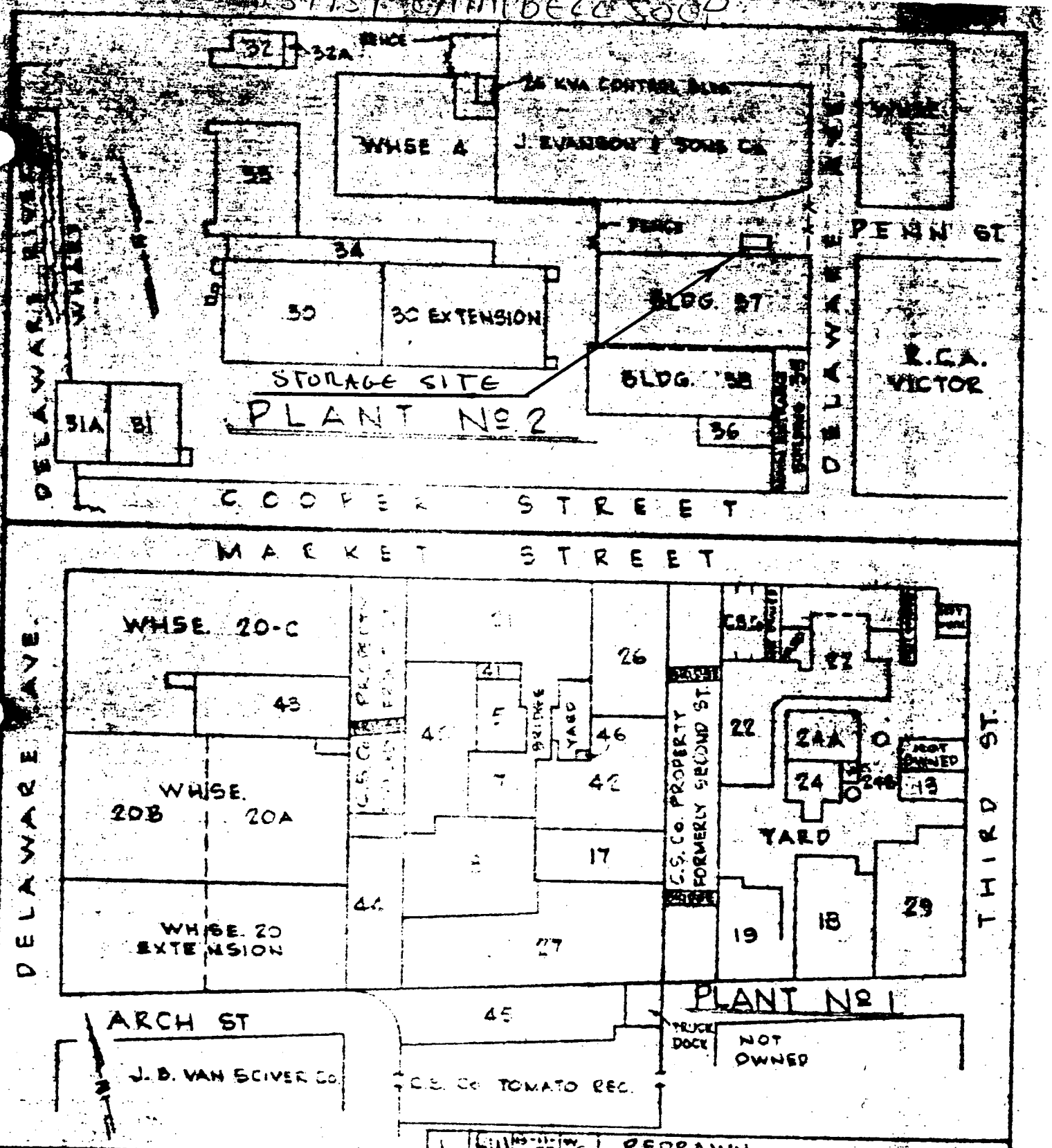


LOCATION MAP

CAMPBELL SOUP COMPANY
CAMDEN PLANT

Reprinted from USGS Maps, Philadelphia, PA and Camden NJ

Scale 1:24000



L	LW	[illegible]	W.C.	REDRAWN
LET	C.R.	DATE	BY	DESCRIPTION OF REVISION

BUILDING NUMBERS PLANTS NO 1 & 2

CAMPBELL SOUP COMPANY

DATE: OCT. 10, 1955
SCALE: NONE
DRAWN: R. WEST
CHECKED:

ENGINEERING SERVICES, CAMDEN, N.J.
JOB NO 48-12474

D-20922-1

REFERENCE NO. 3

code of federal regulations

Protection of Environment

40

PARTS 190 to 399

Revised as of July 1, 1985

CONTAINING
A CODIFICATION OF DOCUMENTS
OF GENERAL APPLICABILITY
AND FUTURE EFFECT

AS OF JULY 1, 1985

With Ancillaries

Published by
the Office of the Federal Register
National Archives and Records
Administration

as a Special Edition of
the Federal Register

§ 261.21 Characteristic of ignitability.

(a) A solid waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:

(1) It is a liquid, other than an aqueous solution containing less than 24 percent alcohol by volume and has flash point less than 60°C (140°F), as determined by a Pensky-Martens Closed Cup Tester, using the test method specified in ASTM Standard D-93-79 or D-93-80 (incorporated by reference, see § 260.11), or a Setaflash Closed Cup Tester, using the test method specified in ASTM Standard D-3278-78 (incorporated by reference, see § 260.11), or as determined by an equivalent test method approved by the Administrator under procedures set forth in §§ 260.20 and 260.21.

(2) It is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard.

(3) It is an ignitable compressed gas as defined in 49 CFR 173.300 and as determined by the test methods described in that regulation or equivalent test methods approved by the Administrator under §§ 260.20 and 260.21.

(4) It is an oxidizer as defined in 49 CFR 173.151.

(b) A solid waste that exhibits the characteristic of ignitability, but is not listed as a hazardous waste in Subpart D, has the EPA Hazardous Waste Number of D001.

[45 FR 33119, May 19, 1980, as amended at 46 FR 35247, July 7, 1981]

§ 261.22 Characteristic of corrosivity.

(a) A solid waste exhibits the characteristic of corrosivity if a representative sample of the waste has either of the following properties:

(1) It is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5, as determined by a pH meter using either an EPA test method or an equivalent test method approved by the Administrator under the procedures set forth in §§ 260.20 and 260.21. The EPA test method for pH is specified as Method 5.2 in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods" (incorporated by reference, see § 260.11).

(2) It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inch) per year at a test temperature of 55°C (130°F) as determined by the test method specified in NACE (National Association of Corrosion Engineers) Standard TM-01-69 as standardized in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods" (incorporated by reference, see § 260.11) or an equivalent test method approved by the Administrator under the procedures set forth in §§ 260.20 and 260.21.

(b) A solid waste that exhibits the characteristic of corrosivity, but is not listed as a hazardous waste in Subpart D, has the EPA Hazardous Waste Number of D002.

[45 FR 33119, May 19, 1980, as amended at 46 FR 35247, July 7, 1981]

§ 261.23 Characteristic of reactivity.

(a) A solid waste exhibits the characteristic of reactivity if a representative sample of the waste has *any* of the following properties:

(1) It is normally unstable and readily undergoes violent change without detonating.

(2) It reacts violently with water.

(3) It forms potentially explosive mixtures with water.

(4) When mixed with water, it generates toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

(5) It is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

(6) It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement.

(7) It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure.

(8) It is a forbidden explosive as defined in 49 CFR 173.51, or a Class A explosive as defined in 49 CFR 173.53 or a Class B explosiv
CFR 173.88.

(b) A solid waste
characteristic of rea
listed as a hazardous
D, has the EPA
Number of D003.

§ 261.24 Characteristic

(a) A solid waste ex
teristic of EP toxicity
methods described i
equivalent methods
Administrator under
set forth in §§ 260.2
extract from a repr
of the waste contain
taminants listed in
centration equal to o
respective value give
Where the waste con
percent filterable s
itself, after filtering,
be the extract for th
section.

(b) A solid waste
characteristic of EP t
listed as a hazardous
D, has the EPA
Number specified in
responds to the to
causing it to be hazar

TABLE I—MAXIMUM CONC
TAMINANTS FOR CHAR
TOXICITY

EPA hazardous waste number	Contami
D004	Arsenic
D005	Barium
D006	Cadmium
D007	Chromium
D008	Lead
D009	Mercury
D010	Selenium
D011	Silver
D012	Endrin (1,2,3,4, loro-1,7-epoxy- 1,4,4a,5,6,7,8,8a- 1,4-endo, enc ano-naphthalene
D013	Lindane (1,2,3,4,5,6 ocyclohexane, ga
D014	Methoxychlor (1, 2,2-bis phenyl)ethane).
D015	Toxaphene ($C_{10}H_{10}$ chlorinated camp percent chlorine).

ste	Hazard code
tion of chrome yellow and orange	(T)
n of ybdate orange pigments	(T)
n of c yellow pigments	(T)
n of rome green pigments	(T)
on of chrome oxide green pigments	(T)
n of blue pigments	(T)
e gr n pigments	(T)
dehyde from ethylene	(T)
idehyde from ethylene	(T)
e production of acrylonitrile	(R, T)
pr ction of acrylonitrile	(R, T)
in th roduction of acrylonitrile	(T)
e	(T)
uction of carbon tetrachloride	(T)
ion column in the production of	(T)
chl e production	(T)
dic ide in ethylene dichloride	(T)
loride in vinyl chloride monomer	(T)
rom nes production	(T)
nol/ tone from cumene	(T)
lic a dride from naphthalene	(T)
c anhydride from naphthalene	(T)
lic anhydride from ortho-xylene	(T)
c anhydride from ortho-xylene	(T)
nzen by the nitration of benzene	(T)
hyl p dines	(T)
isoc ate production	(R, T)
in the production of 1,1,1-trichlor-	(T)
uction of 1,1,1-trichloroethane	(T)
chlo thane	(T)
he p uction of 1,1,1-trichloroeth-	(T)
ed production of trichloroethylene	(T)
	(T)
prod on of aniline	(T)
obe ne/aniline production	(T)
e pr ction of chlorobenzenes	(T)
ct washing step in the production	(T)
ess chlorine production, where	(T)
tion step of the diaphragm cell tion.	(T)
process in chlorine production	(T)
MA cacodylic acid	(T)
f ch ane	(T)
ation of cyclopentadiene in the	(T)
pentadiene in the production of	(T)
chlo tor in the production of	(T)
duction of creosote	(T)
the production of disulfoton	(T)
of disulfoton	(T)
ate p uction	(T)
ithic acid in the production of	(T)
phorate	(T)
toxaphene	(T)
of to hene	(T)

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
K042	Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.	(T)
K043	2,6-Dichlorophenol waste from the production of 2,4-D	(T)
K099	Untreated wastewater from the production of 2,4-D	(T)
Explosives:		
K044	Wastewater treatment sludges from the manufacturing and processing of explosives	(R)
K045	Spent carbon from the treatment of wastewater containing explosives	(R)
K046	Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds.	(T)
K047	Pink/red water from TNT operations	(R)
Petroleum refining:		
K048	Dissolved air flotation (DAF) float from the petroleum refining industry	(T)
K049	Slop oil emulsion solids from the petroleum refining industry	(T)
K050	Heat exchanger bundle cleaning sludge from the petroleum refining industry	(T)
K051	API separator sludge from the petroleum refining industry	(T)
K052	Tank bottoms (leaded) from the petroleum refining industry	(T)
Iron and steel:		
K061	Emission control dust/sludge from the primary production of steel in electric furnaces.	(T)
K062	Spent pickle liquor from steel finishing operations	(C, T)
Secondary lead:		
K069	Emission control dust/sludge from secondary lead smelting	(T)
K100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.	(T)
Veterinary pharmaceuticals:		
K084	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	(T)
K101	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	(T)
K102	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	(T)
Ink formulation: K086	Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.	(T)
Coking:		
K060	Ammonia still lime sludge from coking operations	(T)
K087	Decanter tank tar sludge from coking operations	(T)

[46 FR 4618, Jan. 16, 1981, as amended at 46 FR 27476-27477, May 20, 1981; 49 FR 37070, Sept. 21, 1984]

§ 261.33 Discarded commercial chemical products, off-specification species, container residues, and spill residues thereof.

The following materials or items are hazardous wastes when they are discarded or intended to be discarded as described in § 261.2(a)(2)(i), when they are burned for purposes of energy recovery in lieu of their original intended use, when they are used to produce fuels in lieu of their original intended use, when they are applied to the land in lieu of their original intended use, or when they are contained in products that are applied to the land in lieu of their original intended use.

(a) Any commercial chemical product, or manufacturing chemical intermediate having the generic name listed in paragraph (e) or (f) of this section.

(b) Any off-specification commercial chemical product or manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in paragraph (e) or (f) of this section.

(c) Any container or inner liner removed from a container that has been used to hold any commercial chemical product or manufacturing chemical intermediate having the generic names listed in paragraph (e) of this section, or any container or inner liner removed from a container that has been used to hold any off-specification chemical product and manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in paragraph (e) of this

section, unless the container is empty as defined in § 261.7(b)(3) of this chapter.

[*Comment:* Unless the residue is being beneficially used or reused, or legitimately recycled or reclaimed; or being accumulated, stored, transported or treated prior to such use, re-use, recycling or reclamation, EPA considers the residue to be intended for discard, and thus a hazardous waste. An example of a legitimate re-use of the residue would be where the residue remains in the container and the container is used to hold the same commerical chemical product or manufacturing chemical product or manufacturing chemical intermediate it previously held. An example of the discard of the residue would be where the drum is sent to a drum reconditioner who reconditions the drum but discards the residue.]

(d) Any residue or contaminated soil, water or other debris resulting from the cleanup of a spill into or on any land or water of any commercial chemical product or manufacturing chemical intermediate having the generic name listed in paragraph (e) or (f) of this section, or any residue or contaminated soil, water or other debris resulting from the cleanup of a spill, into or on any land or water, of any off-specification chemical product and manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in paragraph (e) or (f) of this section.

[*Comment:* The phrase "commercial chemical product or manufacturing chemical intermediate having the generic name listed in . . ." refers to a chemical substance which is manufactured or formulated for commercial or manufacturing use which consists of the commercially pure grade of the chemical, any technical grades of the chemical that are produced or marketed, and all formulations in which the chemical is the sole active ingredient. It does not refer to a material, such as a manufacturing process waste, that contains any of the substances listed in paragraphs (e) or (f). Where a manufacturing process waste is deemed to be a hazardous waste because it contains a substance listed in paragraphs (e) or (f), such waste will be listed in either §§ 261.31 or 261.32 or will be identified as a hazardous waste by the characteristics set forth in Subpart C of this part.]

(e) The commercial chemical products, manufacturing chemical intermediates or off-specification commercial chemical products or manufacturing chemical intermediates referred to in paragraphs (a) through (d) of this section, are identified as acute hazardous wastes (H) and are subject to be the small quantity exclusion defined in § 261.5(e).

[*Comment:* For the convenience of the regulated community the primary hazardous properties of these materials have been indicated by the letters T (Toxicity), and R (Reactivity). Absence of a letter indicates that the compound only is listed for acute toxicity.]

These wastes and their corresponding EPA Hazardous Waste Numbers are:

Hazardous waste No.	Substance
P023	Acetaldehyde, chloro-
P002	Acetamide, N-(aminothioxomethyl)-
P057	Acetamide, 2-fluoro-
P058	Acetic acid, fluoro-, sodium salt
P066	Acetimidic acid, N-[(methylcarbamoyl)oxy]thio-, methyl ester
P001	3-(alpha-Acetonylbenzyl)-4-hydroxycoumarin and salts, when present at concentrations greater than 0.3%
P002	1-Acetyl-2-thiourea
P003	Acrolein
P070	Aldicarb
P004	Aldrin
P005	Allyl alcohol
P006	Aluminum phosphide
P007	5-(Aminomethyl)-3-isoxazolol
P008	4-aAminopyridine
P009	Ammonium picrate (R)
P119	Ammonium vanadate
P010	Arsenic acid
P012	Arsenic (III) oxide
P011	Arsenic (V) oxide
P011	Arsenic pentoxide
P012	Arsenic trioxide
P038	Arsine, diethyl-
P054	Aziridine
P013	Barium cyanide
P024	Benzenamine, 4-chloro-
P077	Benzenamine, 4-nitro-
P028	Benzene, (chloromethyl)-
P042	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-
P014	Benzenethiol
P028	Benzyl chloride
P015	Beryllium dust
P016	Bis(chloromethyl) ether
P017	Bromoacetone
P018	Brucine
P021	Calcium cyanide
P123	Camphene, octachloro-
P103	Carbamimidoselenoic acid
P022	Carbon bisulfide
P022	Carbon disulfide
P095	Carbonyl chloride
P033	Chlorine cyanide
P023	Chloroacetaldehyde
P024	p-Chloroaniline
P026	1-(o-Chlorophenyl)thiourea
P027	3-Chloropropionitrile
P029	Copper cyanides

Hazardous waste No.	Substance
P106	Sodium cyanide
P107	Strontium sulfide
P108	Strychnidin-10-one, and salts
P018	Strychnidin-10-one, 2,3-dimethoxy-
P108	Strychnine and salts
P115	Sulfuric acid, thallium(I) salt
P109	Tetraethyldithiopyrophosphate
P110	Tetraethyl lead
P111	Tetraethylpyrophosphate
P112	Tetranitromethane (R)
P062	Tetraphosphoric acid, hexaethyl ester
P113	Thallic oxide
P113	Thallium(III) oxide
P114	Thallium(I) selenite
P115	Thallium(I) sulfate
P045	Thiofanox
P049	Thioimidodicarbonic diamide
P014	Thiophenol
P116	Thiosemicarbazide
P026	Thiourea, (2-chlorophenyl)-
P072	Thiourea, 1-naphthalenyl-
P093	Thiourea, phenyl-
P123	Toxaphene
P118	Trichloromethanethiol
P119	Vanadic acid, ammonium salt
P120	Vanadium pentoxide
P120	Vanadium(V) oxide
P001	Warfarin, when present at concentrations greater than 0.3%
P121	Zinc cyanide
P122	Zinc phosphide (R,T)
P122	Zinc phosphide, when present at concentrations greater than 10%

(f) The commercial chemical products, manufacturing chemical intermediates, or off-specification commercial chemical products referred to in paragraphs (a) through (d) of this section, are identified as toxic wastes (T) unless otherwise designated and are subject to the small quantity exclusion defined in § 261.5 (a) and (f).

[*Comment:* For the convenience of the regulated community, the primary hazardous properties of these materials have been indicated by the letters T (Toxicity), R (Reactivity), I (Ignitability) and C (Corrosivity). Absence of a letter indicates that the compound is only listed for toxicity.]

These wastes and their corresponding EPA Hazardous Waste Numbers are:

Hazardous Waste No.	Substance
U001	Acetaldehyde (I)
U034	Acetaldehyde, trichloro-
U187	Acetamide, N-(4-ethoxyphenyl)-
U005	Acetamide, N-9H-fluoren-2-yl-
U112	Acetic acid, ethyl ester (I)
U144	Acetic acid, lead salt
U214	Acetic acid, thallium(I) salt
U002	Acetone (I)
U003	Acetonitrile (I,T)
U248	3-(alpha-Acetonylbenzyl)-4-hydroxycoumarin and salts, when present at concentrations of 0.3% or less
U004	Acetophenone
U005	2-Acetylaminofluorene
U006	Acetyl chloride (C,R,T)
U007	Acrylamide
U008	Acrylic acid (I)
U009	Acrylonitrile
U150	Alanine, 3-[p-bis(2-chloroethyl)amino] phenyl-, L-
U011	Amitrole
U012	Aniline (I,T)
U014	Auramine
U015	Azaserine
U010	Azirino(2',3':3,4)pyrrolo(1,2-a)indole-4,7-dione, 6-amino-8-[((aminocarbonyl) oxy)methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-,
U157	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-
U016	Benz[c]acridine
U016	3,4-Benzacridine
U017	Benzal chloride
U018	Benz[a]anthracene
U018	1,2-Benzanthracene
U094	1,2-Benzanthracene, 7,12-dimethyl-
U012	Benzenamine (I,T)
U014	Benzenamine, 4,4'-carbonimidoylbis(N,N-dimethyl-
U049	Benzenamine, 4-chloro-2-methyl-
U093	Benzenamine, N,N'-dimethyl-4-phenylazo-
U158	Benzenamine, 4,4'-methylenebis(2-chloro-
U222	Benzenamine, 2-methyl-, hydrochloride
U181	Benzenamine, 2-methyl-5-nitro
U019	Benzene (I,T)
U038	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy, ethyl ester
U030	Benzene, 1-bromo-4-phenoxy-
U037	Benzene, chloro-
U190	1,2-Benzenedicarboxylic acid anhydride
U028	1,2-Benzenedicarboxylic acid, [bis(2-ethylhexyl)] ester
U069	1,2-Benzenedicarboxylic acid, dibutyl ester
U088	1,2-Benzenedicarboxylic acid, diethyl ester
U102	1,2-Benzenedicarboxylic acid, dimethyl ester
U107	1,2-Benzenedicarboxylic acid, di-n-octyl ester
U070	Benzene, 1,2-dichloro-
U071	Benzene, 1,3-dichloro-
U072	Benzene, 1,4-dichloro-
U017	Benzene, (dichloromethyl)-
U223	Benzene, 1,3-diisocyanatomethyl- (R,T)
U239	Benzene, dimethyl-(I,T)
U201	1,3-Benzenediol
U127	Benzene, hexachloro-
U056	Benzene, hexahydro- (I)
U188	Benzene, hydroxy-
U220	Benzene, methyl-
U105	Benzene, 1-methyl-1-2,4-dinitro-
U106	Benzene, 1-methyl-2,6-dinitro-
U203	Benzene, 1,2-methylenedioxy-4-allyl-
U141	Benzene, 1,2-methylenedioxy-4-propenyl-
U090	Benzene, 1,2-methylenedioxy-4-propyl-
U055	Benzene, (1-methylethyl)- (I)
U169	Benzene, nitro- (I,T)
U183	Benzene, pentachloro-
U185	Benzene, pentachloro-nitro-
U020	Benzenesulfonic acid chloride (C,R)
U020	Benzenesulfonyl chloride (C,R)
U207	Benzene, 1,2,4,5-tetrachloro-
U023	Benzene, (trichloromethyl)-(C,R,T)
0234	Benzene, 1,3,5-trinitro- (R,T)
U021	Benzidine
U202	1,2-Benzisothiazolin-3-one, 1
U120	Benzo[j,k]fluorene
U022	Benzo[a]pyrene
U022	3,4-Benzopyrene
U197	p-Benzoquinone
U023	Benzotrichloride (C,R,T)
U050	1,2-Benzphenanthrene
U085	2,2'-Bioxirane (I,T)
U021	(1,1'-Biphenyl)-4,4'-diamine
U073	(1,1'-Biphenyl)-4,4'-diamine,
U091	(1,1'-Biphenyl)-4,4'-diamine,
U095	(1,1'-Biphenyl)-4,4'-diamine,
U024	Bis(2-chloroethoxy) methan
U027	Bis(2-chloroisopropyl) ether
U244	Bis(dimethylthiocarbamoyl)
U028	Bis(2-ethylhexyl) phthalate
U246	Bromine cyanide
U225	Bromoform
U030	4-Bromophenyl phenyl ethe
U128	1,3-Butadiene, 1,1,2,3,4,4-h
U172	1-Butanamine, N-butyl-N-nit
U035	Butanoic acid, 4-[Bis(2-benzene-
U031	1-Butanol (I)
U159	2-Butanone (I,T)
U160	2-Butanone peroxide (R,T)
U053	2-Butenal
U074	2-Butene, 1,4-dichloro- (I,T
U031	n-Butyl alchohol (I)
U136	Cacodylic acid
U032	Calcium chromate
U238	Carbamic acid, ethyl ester
U178	Carbamic acid, methylnitro
U176	Carbamide, N-ethyl-N-nitro
U177	Carbamide, N-methyl-N-nit
U219	Carbamide, thio-
U097	Carbamoyl chloride, dimet
U215	Carbonic acid, dithallium(I)
U156	Carbonochloridic acid, me
U033	Carbon oxyfluoride (R,T)
U211	Carbon tetrachloride
U033	Carbonyl fluoride (R,T)
U034	Chloral
U035	Chlorambucil
U036	Chlordane, technical
U026	Chlornaphazine
U037	Chlorobenzene
U039	4-Chloro-m-cresol
U041	1-Chloro-2,3-epoxypropar
U042	2-Chloroethyl vinyl ether
U044	Chloroform
U046	Chloromethyl methyl eth
U047	beta-Chloronaphthalene
U048	o-Chlorophenol
U049	4-Chloro-o-toluidine, hyd
U032	Chromic acid, calcium s
U050	Chrysene
U051	Creosote
U052	Cresols
U052	Cresylic acid
U053	Crotonaldehyde
U055	Cumene (I)
U246	Cyanogen bromide
U197	1,4-Cyclohexadienedion
U056	Cyclohexane (I)
U057	Cyclohexanone (I)
U130	1,3-Cyclopentadiene, 1,
U058	Cyclophosphamide
U240	2,44-D, salts and esters
U059	Daunomycin

Hazardous Waste No.	Substance
0234	Benzene, 1,3,5-trinitro- (R,T)
U021	Benzidine
U202	1,2-Benzisothiazolin-3-one, 1,1-dioxide
U120	Benzo[j,k]fluorene
U022	Benzo[a]pyrene
U022	3,4-Benzopyrene
U197	p-Benzoquinone
U023	Benzotrichloride (C,R,T)
U050	1,2-Benzphenanthrene
U085	2,2'-Bioxirane (I,T)
U021	(1,1'-Biphenyl)-4,4'-diamine
U073	(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dichloro-
U091	(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dimethoxy-
U095	(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dimethyl-
U024	Bis(2-chloroethoxy) methane
U027	Bis(2-chloroisopropyl) ether
U244	Bis(dimethylthiocarbamoyl) disulfide
U028	Bis(2-ethylhexyl) phthalate
U246	Bromine cyanide
U225	Bromoform
U030	4-Bromophenyl phenyl ether
U128	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-
U172	1-Butanamine, N-butyl-N-nitroso-
U035	Butanoic acid, 4-[Bis(2-chloroethyl)amino] benzene-
U031	1-Butanol (I)
U159	2-Butanone (I,T)
U160	2-Butanone peroxide (R,T)
U053	2-Butenal
U074	2-Butene, 1,4-dichloro- (I,T)
U031	n-Butyl alchohol (I)
U136	Cacodylic acid
U032	Calcium chromate
U238	Carbamic acid, ethyl ester
U178	Carbamic acid, methylnitroso-, ethyl ester
U176	Carbamide, N-ethyl-N-nitroso-
U177	Carbamide, N-methyl-N-nitroso-
U219	Carbamide, thio-
U097	Carbamoyl chloride, dimethyl-
U215	Carbonic acid, dithallium(I) salt
U156	Carbonochloridic acid, methyl ester (I,T)
U033	Carbon oxyfluoride (R,T)
U211	Carbon tetrachloride
U033	Carbonyl fluoride (R,T)
U034	Chloral
U035	Chlorambucil
U036	Chlordane, technical
U026	Chlornaphazine
U037	Chlorobenzene
U039	4-Chloro-m-cresol
U041	1-Chloro-2,3-epoxypropane
U042	2-Chloroethyl vinyl ether
U044	Chloroform
U046	Chloromethyl methyl ether
U047	beta-Chloronaphthalene
U048	o-Chlorophenol
U049	4-Chloro-o-toluidine, hydrochloride
U032	Chromic acid, calcium salt
U050	Chrysene
U051	Creosote
U052	Cresols
U052	Cresylic acid
U053	Crotonaldehyde
U055	Cumene (I)
U246	Cyanogen bromide
U197	1,4-Cyclohexadienedione
U056	Cyclohexane (I)
U057	Cyclohexanone (I)
U130	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexa- chloro-
U058	Cyclophosphamide
U240	2,44-D, salts and esters
U059	Daunomycin

Hazardous Waste No.	Substance
U060	DDD
U061	DDT
U142	Decachlorooctahydro-1,3,4-metheno-2H-cyclobuta[c,d]-pentalen-2-one
U062	Diallate
U133	Diamine (R,T)
U221	Diaminotoluene
U063	Dibenz[a,h]anthracene
U063	1,2:5,6-Dibenzanthracene
U064	1,2:7,8-Dibenzopyrene
U064	Dibenz[a,i]pyrene
U066	1,2-Dibromo-3-chloropropane
U069	Dibutyl phthalate
U062	S-(2,3-Dichloroallyl) di sopropylthiocarbamate
U070	o-Dichloroben ene
U071	m-Dichlorobenzene
U072	p-Dichlorobenzene
U073	3,3'-Dichlorobenzidine
U074	1,4-Dichloro-2-butene (I,T)
U075	Dichlorodifluoromethane
U192	3,5-Dichloro-N-(1,1-dimethyl-2-propynyl) benzamide
U060	Dichloro diphenyl dichloroethane
U061	Dichloro diphenyl trichloroethane
U078	1,1-Dichloroethylene
U079	1,2-Dichloroethylene
U025	Dichloroethyl ether
U081	2,4-Dichlorophenol
U082	2,6-Dichlorophenol
U240	2,4-Dichlorophenoxyacetic acid, salts and esters
U083	1,2-Dichloropropane
U084	1,3-Dichloropropene
U085	1,2:3,4-Diepoxybutane (I,T)
U108	1,4-Diethylene dioxide
U086	N,N-Diethylhydrazine
U087	O,O-Diethyl-S-methyl-dithiophosphate
U088	Diethyl phthalate
U089	Diethylstilbestrol
U148	1,2-Dihydro-3,6-pyradizinedione
U090	Dihydrosafrole
U091	3,3'-Dimethoxybenzidine
U092	Dimethylamine (I)
U093	Dimethylaminoazobenzene
U094	7,12-Dimethylbenz[a]anthracene
U095	3,3'-Dimethylbenzidine
U096	alpha,alpha-Dimethylbenzylhydroperoxide (R)
U097	Dimethylcarbamoyl chloride
U098	1,1-Dimethylhydrazine
U099	1,2-Dimethylhydrazine
U101	2,4-Dimethylphenol
U102	Dimethyl phthalate
U103	Dimethyl sulfate
U105	2,4-Dinitrotoluene
U106	2,6-Dinitrotoluene
U107	Di-n-octyl phthalate
U108	1,4-Dioxane
U109	1,2- Diphenylhydrazine
U110	Dipropylamine (I)
U111	Di-N-propylnitrosamine
U001	Ethanal (I)
U174	Ethanamine, N-ethyl-N-nitroso-
U067	Ethane, 1,2-dibromo-
U076	Ethane, 1,1-dichloro-
U077	Ethane, 1,2-dichloro-
U114	1,2-Ethanediylbiscarbamodithioic acid
U131	Ethane, 1,1,1,2,2,2-hexachloro-
U024	Ethane, 1,1'-[methylenebis(oxy)]bis[2-chloro-
U003	Ethanenitrile (I, T)
U117	Ethane,1,1'-oxybis- (I)
U025	Ethane, 1,1'-oxybis[2-chloro-
U184	Ethane, pentachloro-

Hazardous Waste No.	Substance
U208	Ethane, 1,1,1,2-tetrachloro-
U209	Ethane, 1,1,2,2-tetrachloro-
U218	Ethanethioamide
U247	Ethane, 1,1,1,-trichloro-2,2-bis(p-methoxyphenyl).
U227	Ethane, 1,1,2-trichloro-
U043	Ethene, chloro-
U042	Ethene, 2-chloroethoxy-
U078	Ethene, 1,1-dichloro-
U079	Ethene, trans-1,2-dichloro-
U210	Ethene, 1,1,2,2-tetrachloro-
U173	Ethanol, 2,2'-(nitrosoimino)bis-
U004	Ethanone, 1-phenyl-
U006	Ethanoyl chloride (C,R,T)
U112	Ethyl acetate (I)
U113	Ethyl acrylate (I)
U238	Ethyl carbamate (urethan)
U038	Ethyl 4,4'-dichlorobenzilate
U114	Ethylenebis(dithiocarbamic acid)
U067	Etylene dibromide
U077	Ethylene dichloride
U115	Ethlene oxide (I,T)
U116	Ethylene thiourea
U117	Ethyl ether (I)
U076	Ethylidene dichloride
U118	Ethylmethacrylate
U119	Ethyl methanesulfonate
U139	Ferric dextran
U120	Fluoranthene
U122	Formaldehyde
U123	Formic acid (C,T)
U124	Furan (I)
U125	2-Furancarboxaldehyde (I)
U147	2,5-Furandione
U213	Furan, tetrahydro- (I)
U125	Furfural (I)
U124	Furfuran (I)
U206	D-Glucopyranose, 2-deoxy-2(3-methyl-3-nitrosoureido)-
U126	Glycidylaldehyde
U163	Guanidine, N-nitroso-N-methyl-N'nitro-
U127	Hexachlorobenzene
U128	Hexachlorobutadiene
U129	Hexachlorocyclohexane (gamma isomer)
U130	Hexachlorocyclopentadiene
U131	Hexachloroethane
U132	Hexachlorophene
U243	Hexachloropropene
U133	Hydrazine (R,T)
U086	Hydrazine, 1,2-diethyl-
U098	Hydrazine, 1,1-dimethyl-
U099	Hydrazine, 1,2-dimethyl-
U109	Hydrazine, 1,2-diphenyl-
U134	Hydrofluoric acid (C,T)
U134	Hydrogen fluoride (C,T)
U135	Hydrogen sulfide
U096	Hydroperoxide, 1-methyl-1-phenylethyl- (R)
U136	Hydroxydimethylarsine oxide
U116	2-Imidazolidinethione
U137	Indeno[1,2,3-cd]pyrene
U139	Iron dextran
U140	Isobutyl alcohol (I,T)
U141	Isosafrole
U142	Kepone
U143	Lasiocarpine
U144	Lead acetate
U145	Lead phosphate
U146	Lead subacetate
U129	Lindane
U147	Maleic anhydride
U148	Maleic hydrazide
U149	Malononitrile
U150	Melphalan
U151	Mercury
U152	Methacrylonitrile (I,T)
U092	Methanamine, N-methyl- (I)
U029	Methane, bromo-
U045	Methane, chloro- (I,T)
U046	Methane, chloromethoxy-
U068	Methane, dibromo-
U080	Methane, dichloro-
U075	Methane, dichlorodifluoro-
U138	Methane, iodo-
U119	Methanesulfonic acid, ethyl ester
U211	Methane, tetrachloro-
U121	Methane, trichlorofluoro-
U153	Methanethiol (I,T)
U225	Methane, tribromo-
U044	Methane, trichloro-
U121	Methane, trichlorofluoro-
U123	Methanoic acid (C,T)
U036	4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-
U154	Methanol (I)
U155	Methapyrilene
U247	Methoxychlor.
U154	Methyl alcohol (I)
U029	Methyl bromide
U186	1-Methylbutadiene (I)
U045	Methyl chloride (I,T)
U156	Methyl chlorocarbonate (I,T)
U226	Methylchloroform
U157	3-Methylcholanthrene
U158	4,4'-Methylenebis(2-chloroaniline)
U132	2,2'-Methylenebis(3,4,6-trichlorophenol)
U068	Methylene bromide
U080	Methylene chloride
U122	Methylene oxide
U159	Methyl ethyl ketone (I,T)
U160	Methyl ethyl ketone peroxide (R,T)
U138	Methyl iodide
U161	Methyl isobutyl ketone (I)
U162	Methyl methacrylate (I,T)
U163	N-Methyl-N'-nitro-N-nitrosoguanidine
U161	4-Methyl-2-pentanone (I)
U164	Methylthiouracil
U010	Mitomycin C
U059	5,12-Naphthacenedione, (8S-cis)-8-acetyl-10-[(3-amino-2,3,6-trideoxy-alpha-L-lyxo-hexopyranosyl)oxyl]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-
U165	Naphthalene
U047	Naphthalene, 2-chloro-
U166	1,4-Naphthalenedione
U236	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethyl-(1,1'-biphenyl)-4,4'diyl)]-bis (azo)bis(5-amino-4-hydroxy)-,tetrasodium salt
U166	1,4,Naphthaquinone
U167	1-Naphthylamine
U168	2-Naphthylamine
U167	alpha-Naphthylamine
U168	beta-Naphthylamine
U026	2-Naphthylamine, N,N'-bis(2-chloromethyl)-
U169	Nitrobenzene (I,T)
U170	p-Nitrophenol
U171	2-Nitropropane (I)
U172	N-Nitrosodi-n-butylamine
U173	N-Nitrosodiethanolamine
U174	N-Nitrosodiethylamine
U111	N-Nitroso-N-propylamine
U176	N-Nitroso-N-ethylurea
U177	N-Nitroso-N-methylurea
U178	N-Nitroso-N-methylurethane

Hazardous Waste No.	Substance
U179	N-N
U180	N-N
U181	5-N
U193	1,2
U058	2H- e
U115	Oxi
U041	Oxi
U182	Par
U183	Per
U184	Per
U185	Per
See F027	Per
U186	1,3-
U187	Phe
U188	Phe
U048	Phe
U039	Phe
U081	Phe
U082	Phe
U101	Phe
U170	Phe
See F027	Phe
Do	Phe
Do	Phe
Do	Phe
U137	1,10
U145	Pho
U087	Pho le
U189	Pho
U190	Phth
U191	2-Pi
U192	Pror
U194	1-Pr
U110	1-Pr
U066	Prop
U149	Prop
U171	Prop
U027	Prop
U193	1,3-I
U235	1-Pr
U126	1-Pr
U140	1-Pr
U002	2-Pr
U007	2-Pr
U084	Prop
U243	1-Pr
U009	2-Pr
U152	2-Pr
U008	2-Pr
U113	2-Pr
U118	2-Pr
U162	2-Pr
See F027	Prop
U194	n-Pr
U083	Prop
U196	Pyri
U155	Pyri mi
U179	Pyri
U191	Pyri
U164	4(1H- thi
U180	Pyrr
U200	Rese
U201	Resc
U202	Sacc
U203	Safr
U204	Sele
U204	Sele
U205	Sele

Substance
Melphalan
Mercury
Methacrylonitrile (I,T)
Methanamine, N-methyl- (I)
Methane, bromo-
Methane, chloro- (I,T)
Methane, chloromethoxy-
Methane, dibromo-
Methane, dichloro-
Methane, dichlorodifluoro-
Methane, iodo-
Methanesulfonic acid, ethyl ester
Methane, tetrachloro-
Methane, trichlorofluoro-
Methanethiol (I,T)
Methane, tribromo-
Methane, trichloro-
Methane, trichlorofluoro-
Methanoic acid (C,T)
4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-
Methanol (I)
Methapyrilene
Methoxychlor.
Methyl alcohol (I)
Methyl bromide
1-Methylbutadiene (I)
Methyl chloride (I,T)
Methyl chlorocarbonate (I,T)
Methylchloroform
Methylcholanthrene
4,4'-Methylenebis(2-chloroaniline)
2,2'-Methylenebis(3,4,6-trichlorophenol)
Methylene bromide
Methylene chloride
Methylene oxide
Methyl ethyl ketone (I,T)
Methyl ethyl ketone peroxide (R,T)
Methyl iodide
Methyl isobutyl ketone (I)
Methyl methacrylate (I,T)
Methyl-N'-nitro-N-nitrosoguanidine
4-Methyl-2-pentanone (I)
Methylthiouracil
Mitomycin C
2-Naphthacenedione, (8S-cis)-8-acetyl-10-[(3-amino-2,3,6-trideoxy-alpha-L-lyxo-hexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-
Naphthalene
Naphthalene, 2-chloro-
1-Naphthalenedione
1-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethyl-(1,1'-biphenyl)-4,4'diyl)]-bis(azo)bis(5-amino-4-hydroxy)-,tetrasodium salt
1,4-Naphthaquinone
1-Naphthylamine
2-Naphthylamine
alpha-Naphthylamine
beta-Naphthylamine
2-Naphthylamine, N,N'-bis(2-chloromethyl)-
Nitrobenzene (I,T)
4-Nitrophenol
2-Nitropropane (I)
N-Nitrosodi-n-butylamine
N-Nitrosodiethanolamine
N-Nitrosodiethylamine
N-Nitroso-N-propylamine
N-Nitroso-N-ethylurea
N-Nitroso-N-methylurea
N-Nitroso-N-methylurethane

Hazardous Waste No.	Substance
U179	N-Nitrosopiperidine
U180	N-Nitrosopyrrolidine
U181	5-Nitro-o-toluidine
U193	1,2-Oxathiolane, 2,2-dioxide
U058	2H-1,3,2-Oxazaphosphorine, 2-[bis(2-chloroethyl)amino]tetrahydro-, oxide 2-
U115	Oxirane (I,T)
U041	Oxirane, 2-(chloromethyl)-
U182	Paraldehyde
U183	Pentachlorobenzene
U184	Pentachloroethane
U185	Pentachloronitrobenzene
See F027	Pentachlorophenol
U186	1,3-Pentadiene (I)
U187	Phenacetin
U188	Phenol
U048	Phenol, 2-chloro-
U039	Phenol, 4-chloro-3-methyl-
U081	Phenol, 2,4-dichloro-
U082	Phenol, 2,6-dichloro-
U101	Phenol, 2,4-dimethyl-
U170	Phenol, 4-nitro-
See F027	Phenol, pentachloro-
Do	Phenol, 2,3,4,6-tetrachloro-
Do	Phenol, 2,4,5-trichloro-
Do	Phenol, 2,4,6-trichloro-
U137	1,10-(1,2-phenylene)pyrene
U145	Phosphoric acid, Lead salt
U087	Phosphorodithioic acid, 0,0-diethyl-, S-methyl-ester
U189	Phosphorous sulfide (R)
U190	Phthalic anhydride
U191	2-Picoline
U192	Pronamide
U194	1-Propanamine (I,T)
U110	1-Propanamine, N-propyl- (I)
U066	Propane, 1,2-dibromo-3-chloro-
U149	Propanedinitrile
U171	Propane, 2-nitro- (I)
U027	Propane, 2,2'oxybis[2-chloro-
U193	1,3-Propane sultone
U235	1-Propanol, 2,3-dibromo-, phosphate (3:1)
U126	1-Propanol, 2,3-epoxy-
U140	1-Propanol, 2-methyl- (I,T)
U002	2-Propanone (I)
U007	2-Propenamide
U084	Propene, 1,3-dichloro-
U243	1-Propene, 1,1,2,3,3,3-hexachloro-
U009	2-Propenenitrile
U152	2-Propenenitrile, 2-methyl- (I,T)
U008	2-Propenoic acid (I)
U113	2-Propenoic acid, ethyl ester (I)
U118	2-Propenoic acid, 2-methyl-, ethyl ester
U162	2-Propenoic acid, 2-methyl-, methyl ester (I,T)
See F027	Propionic acid, 2-(2,4,5-trichlorophenoxy)-
U194	n-Propylamine (I,T)
U083	Propylene dichloride
U196	Pyridine
U155	Pyridine, 2-[(2-(dimethylamino)-2-thenylamino]-
U179	Pyridine, hexahydro-N-nitroso-
U191	Pyridine, 2-methyl-
U164	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-
U180	Pyrrole, tetrahydro-N-nitroso-
U200	Reserpine
U201	Resorcinol
U202	Saccharin and salts
U203	Safrole
U204	Selenious acid
U204	Selenium dioxide
U205	Selenium disulfide (R,T)

Hazardous Waste No.	Substance
U015	L-Serine, diazoacetate (ester)
See F027	Silvex
U089	4,4'-Stilbenediol, alpha,alpha'-diethyl-
U206	Streptozotocin
U135	Sulfur hydride
U103	Sulfuric acid, dimethyl ester
U189	Sulfur phosphide (R)
U205	Sulfur selenide (R,T)
See F027	2,4,5-T
U207	1,2,4,5-Tetrachlorobenzene
U208	1,1,1,2-Tetrachloroethane
U209	1,1,2,2-Tetrachloroethane
U210	Tetrachloroethylene
See F027	2,3,4,6-Tetrachlorophenol
U213	Tetrahydrofuran (I)
U214	Thallium(I) acetate
U215	Thallium(I) carbonate
U216	Thallium(I) chloride
U217	Thallium(I) nitrate
U218	Thioacetamide
U153	Thiomethanol (I,T)
U219	Thiourea
U244	Thiram
U220	Toluene
U221	Toluenediamine
U223	Toluene diisocyanate (R,T)
U222	O-Toluidine hydrochloride
U011	1H-1,2,4-Triazol-3-amine
U226	1,1,1-Trichloroethane
U227	1,1,2-Trichloroethane
U228	Trichloroethene
U228	Trichloroethylene
U121	Trichloromonofluoromethane
See F027	2,4,5-Trichlorophenol
Do	2,4,6-Trichlorophenol
Do	2,4,5-Trichlorophenoxyacetic acid
U234	sym-Trinitrobenzene (R,T)
U182	1,3,5-Trioxane, 2,4,5-trimethyl-
U235	Tris(2,3-dibromopropyl) phosphate
U236	Trypan blue
U237	Uracil, 5[bis(2-chloromethyl)amino]-
U237	Uracil mustard
U043	Vinyl chloride
U248	Warfarin, when present at concentrations of 0.3% or less
U239	Xylene (I)
U200	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxy-benzoyl)oxy]-, methyl ester
U249	Zinc phosphide, when present at concentrations of 10% or less.

[45 FR 78529, 78541, Nov. 25, 1980, as amended at 46 FR 27477, May 20, 1981; 49 FR 19923, May 10, 1984; 49 FR 665, Jan. 4, 1985; 50 FR 2000, Jan. 14, 1985]

EFFECTIVE DATE NOTE: At 50 FR 665, Jan. 4, 1985, § 261.33 introductory text was revised, effective July 5, 1985. At 50 FR 2000, Jan. 14, 1985, the table in paragraph (f) was amended by revising certain hazardous waste numbers, effective July 15, 1985. For the convenience of the user, the superseded introductory text (published at 49 FR 37070, Sept. 21, 1984), and entries in the paragraph (f) table, are set out below:

REFERENCE NO. 4

NUS CORPORATION	TITLE: THREE MILE VICINITY MAP
DATE: 1/10/89	SITE: CAMPBELL SOUP COMPANY (MARKET STREET), CAMDEN, N.J.
TDD: 02-8901-04	
QUAD: PHILADELPHIA PA.	FIGURE NUMBER:
	SCALE: 1"= 2000'

REFERENCE NO. 5

PRELIMINARY ASSESSMENT
OFF SITE RECONNAISSANCE
INFORMATION REPORTING FORM

Date: 1/11/89

Site Name: Campbell Soup Company (Market Street) TDD: 02-8901-04

Site Address: 100 Market Street
Street, Box, etc.

Camden
Town

Camden
County

NJ
State

NUS Personnel:

Name	Discipline
Diane Trube	Geologist
Kurt Fendler	Field Tech
Joe Dvorak	Chemist

Weather Conditions (clear, cloudy, rain, snow, etc.):

41°F Sunny, clear

Estimated wind direction and wind speed: minimal wind

Estimated temperature: 41° F

Signature: Diane Trube Date: 1/11/89

Countersigned: Kurt Fendler Date: 1/12/89

PRELIMINARY ASSESSMENT

INFORMATION REPORTING FORM

Date: 1/11/89

Site Name: Campbell Soup Company (Market Street) TDD: 02-8901-04

Site Sketch:

Indicate relative landmark locations (streets, buildings, streams, etc.). Provide locations from which photos are taken.

See attached map.
Only bldg 37 at Plant 2 remains
Plant #1 is as shown.

Signature: Diane Lube Date: 1/11/89

Countersigned: Kent Franklin Date: 1/11/89

PRELIMINARY ASSESSMENT

INFORMATION REPORTING FORM

Date: 1/11/89

Site Name: Campbell Soup Company (Market Street) TDD: 02-8901-04

Notes (Periodically indicate time of entries in military time):

1015 ~~At~~ site. Drove around Plant #1. Entire perimeter is paved. No waste units visible. Access restricted by gates/fences and security. No apparent migration route overland to Delaware River.
1021 Left Plant #1
1030 Plant #2 has been reduced to rubble. Security guard at gate to Plant #1 confirmed this was Plant #2. It was demolished about a year ago. Bulldozer + 2 backhoes are seen working at rubble.
Bldg 37 is gutted but still standing. Two storage tanks visible on west side. Soil is stained.
D Tuke + K. Taylor spoke w/someone at Tomar Office (demolition). This ~~area~~ bldg 37 + lot ~~2FH~~ will be demolished by July. Campbell Soup will sign property over to RCA for parking lot, + RCA will sign over property to Campbell for their world hdqtrs. ~~NJD~~ NJEDA (NJ Economic

Signature: Diane Tuke Date: 1/11/89
Countersignature: Kurt [illegible] Date: 1/12/89

PRELIMINARY ASSESSMENT

INFORMATION REPORTING FORM

Date: 1/11/89

Site Name: Campbell Soup Company (Market Street) TDD: 02-8901-04

Notes (Cont'd):

Development (Agency) is overseeing the project

1052 Loft area

Attach additional sheets if necessary. Provide site name, TDD number, signature, and countersignature on each.

Signature: Diane Lubbe Date: 1/11/89

Countersignature: Kent Franklin Date: 1/12/89

PRELIMINARY ASSESSMENT

INFORMATION REPORTING FORM

Date: 1/11/89

Site Name: Campbell Soup Company (Market Street) TDD: 02-8901-04

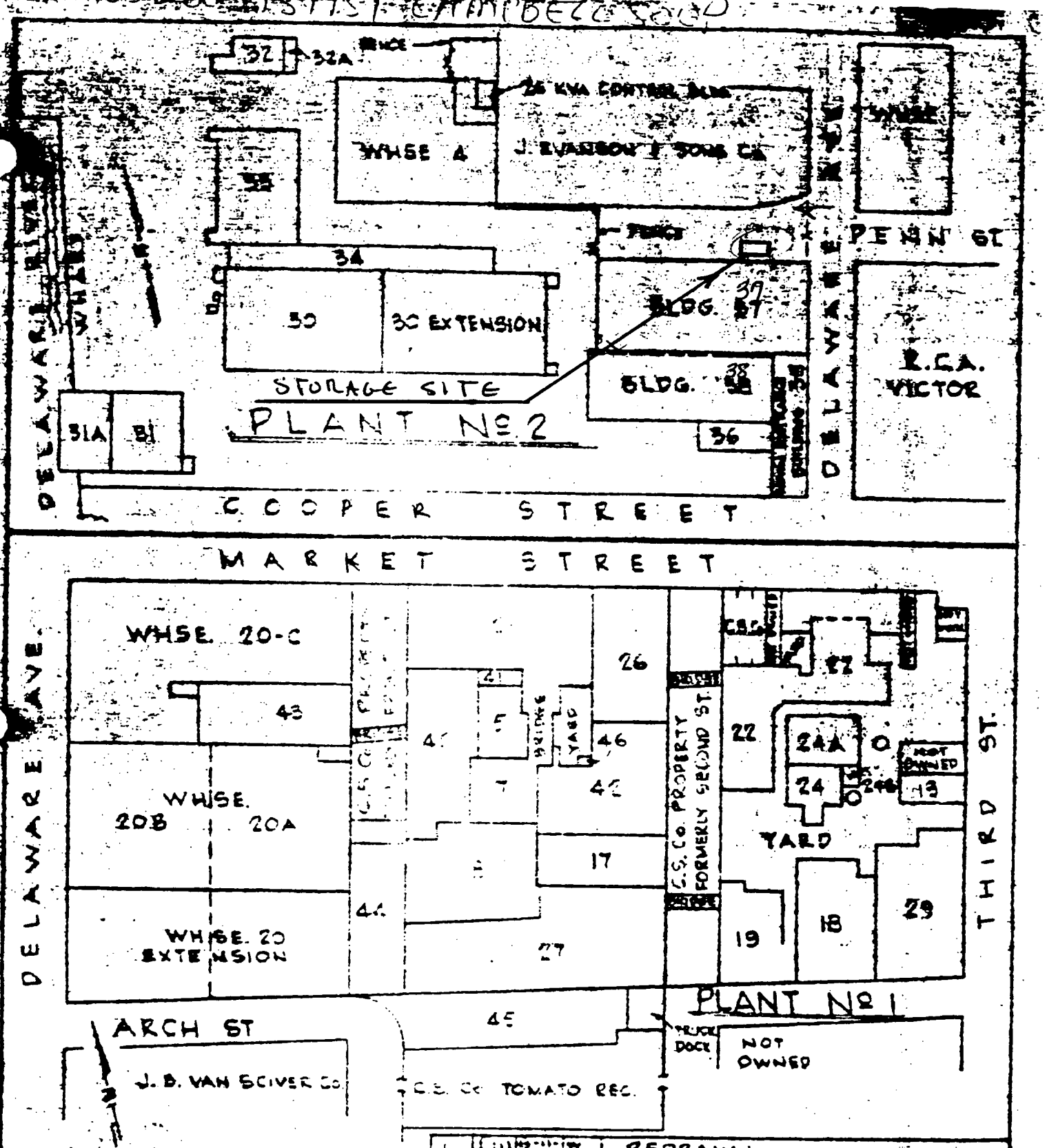
Photolog:

Frame/Photo Number	Date	Time	Photographer	Description
P10/S10	1/11	1015	K. Fendler	E Side of Plant #1
P11/S11	1/11	1020	K. Fendler	E. Side of Plant #1
P12/S12	1/11	1034	D Tribe	Remnants of Plant #2 from Delaware Ave
P13/S13	1/11	1041	D Tribe	West side of Bldg 37 at Plant 2.
P14/S14	1/11	1052	D Tribe	Rubble seen from East side bldg 37.

Attach additional sheets if necessary. Provide site name, TDD number, signature, and countersignature on each.

Signature: Duane Tribe Date: 1/11/89

Countersignature: Kurt Fendler Date: 1/12/89



L	LW			REDRAWN
LET	CHR	DATE	BY	DESCRIPTION OF REVISION

BUILDING NUMBERS PLANTS NO 1 & 2

CAMPBELL SOUP COMPANY

DATE : OCT. 10, 1985
SCALE: NONE
DRAWN: R. WEST
CHECKED:

ENGINEERING SERVICES, CAMDEN, N.J.
JOB NO 88-12474

D-70977-T

OZ-8961-04
1/1/89
Diane Lube

REFERENCE NO. 6

GEOLOGY AND GROUND-WATER RESOURCES OF CAMDEN COUNTY, NEW JERSEY

By George M. Farlekas, Bronius Nemickas, and Harold E. Gill

U.S. GEOLOGICAL SURVEY
Water-Resources Investigations 76–76

Prepared in cooperation with
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION, DIVISION OF WATER RESOURCES

June 1976

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Cretaceous System

Potomac Group and the Raritan and Magothy Formations

Regional Setting and Stratigraphic Framework

The Potomac Group and the Raritan and Magothy Formations are fluvial-marginal marine sediments of Early to Late Cretaceous age and overlie the pre-Cretaceous crystalline rocks. These sediments make up an extensive part of the Coastal Plain sediments in New Jersey and in the adjacent states. Major structures which contain the greatest thickness of sediments are the Salisbury embayment (Richards, 1945) in Delaware and the Raritan embayment in the vicinity of Raritan Bay and eastern Long Island. The area between these two embayments, which includes Camden County, contains smaller arches and troughs. The outcrop area of the Potomac Group and Raritan and Magothy Formations in Camden County (21 square miles in area) is in the northwestern part of the county near the Delaware River. The units are extensively overlain by permeable Pleistocene deposits in the outcrop area.

The Potomac Group and the Raritan and Magothy Formations form a wedge-shaped body that thickens in a downdip direction and is underlain by the crystalline basement. The configuration of the crystalline rocks is shown in figure 7. The upper limit of the wedge-shaped body is the contact between the Merchantville Formation and the top of the Magothy Formation (fig. 8). The difference between the basement and the top of the Magothy is the total thickness of Potomac Group and the Raritan and Magothy Formations (fig. 9).

In Camden County the thickness of the Potomac Group and Raritan and Magothy Formations ranges from approximately 260 feet at the Collingswood well 7 (CO 7), located near the outcrop area, to approximately 1,210 feet at the New Brooklyn Park test well (WI 27). This is shown on the thickness map in figure 9. The distance between the two wells is 13 miles.

Correlation of part of the Cretaceous stratigraphic section in northern New Jersey and Maryland as determined by Wolfe and Pakiser (1971) is given below.

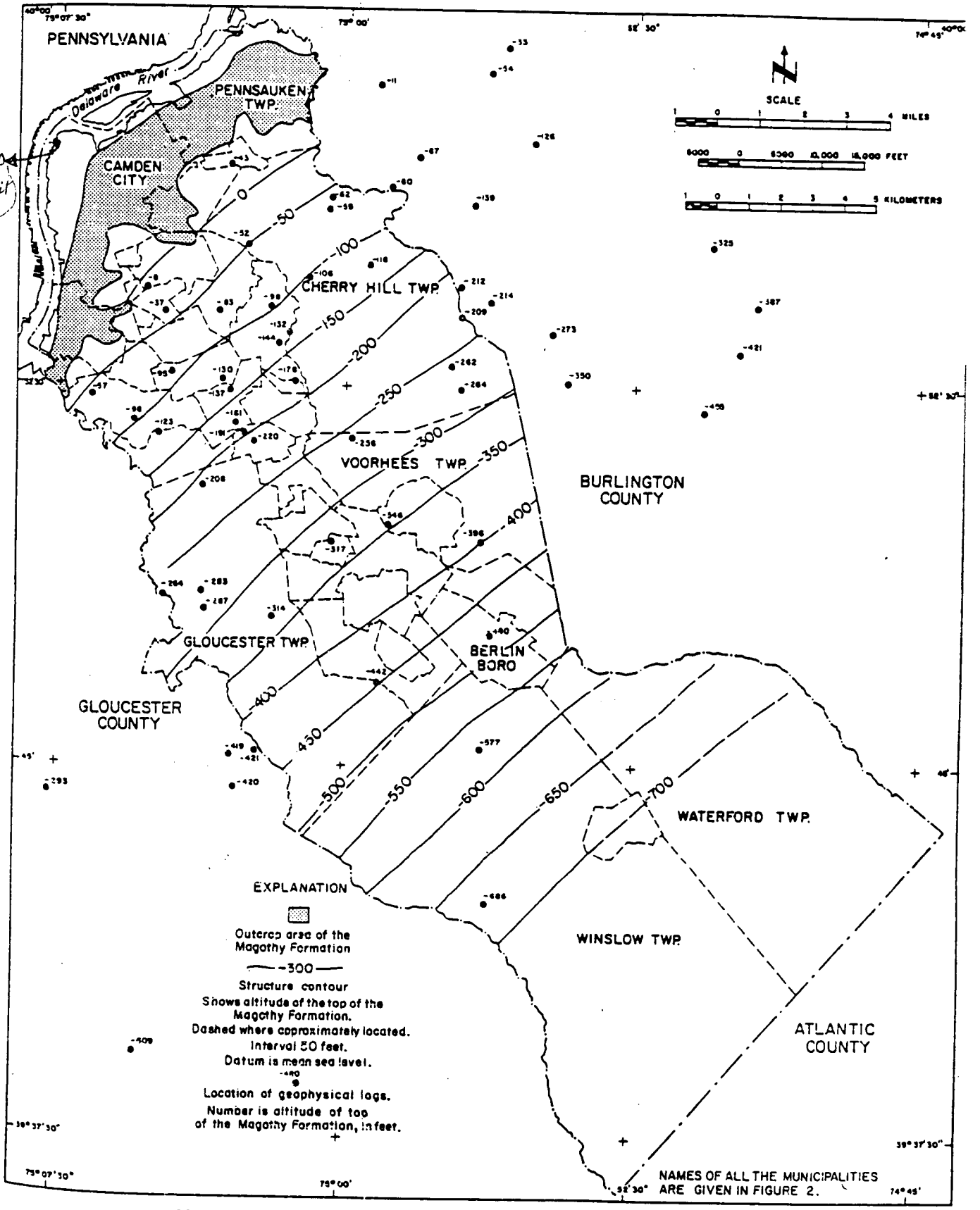


Figure 8. — Structure contour map of the top of the Magothy Formation in Camden County.

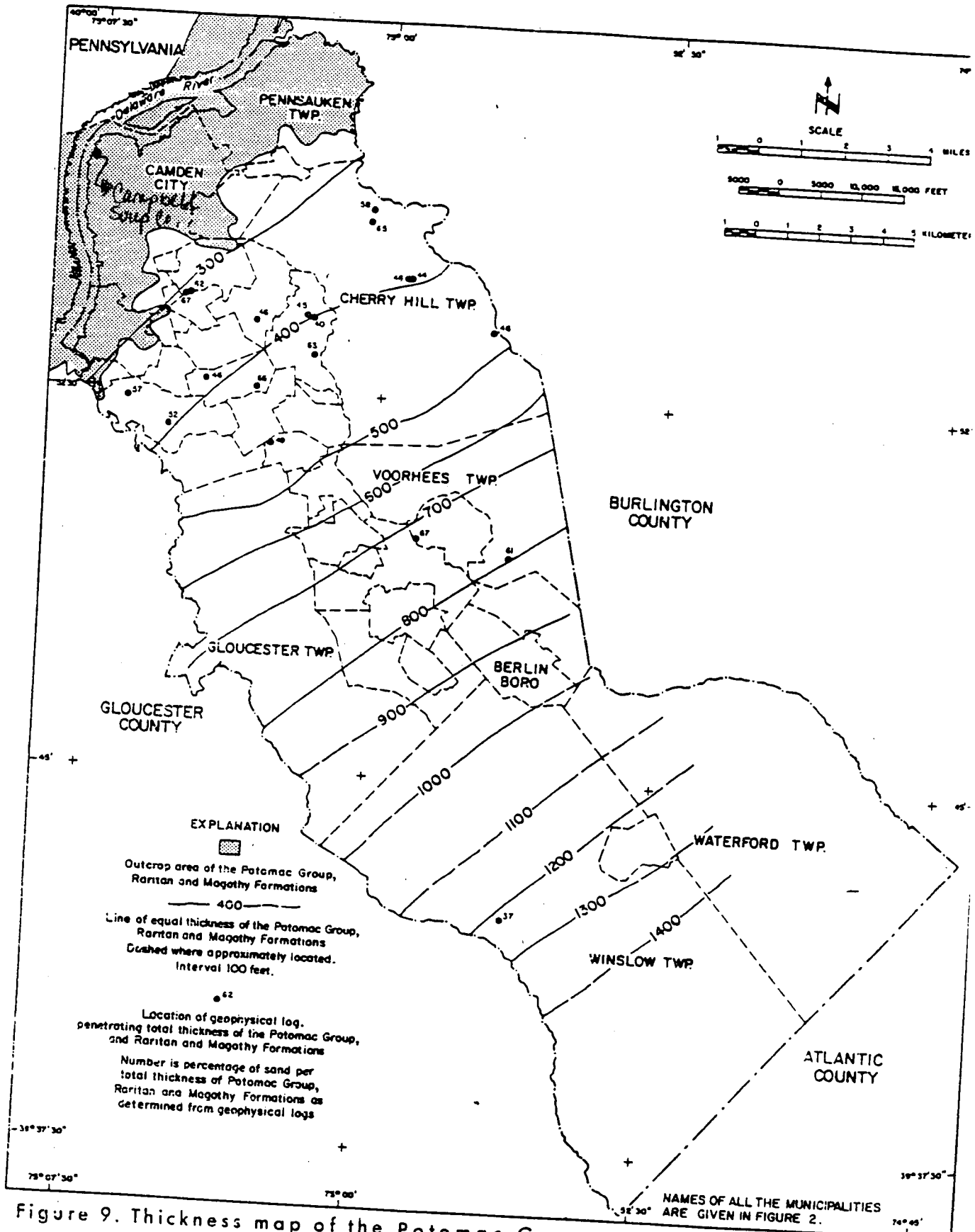
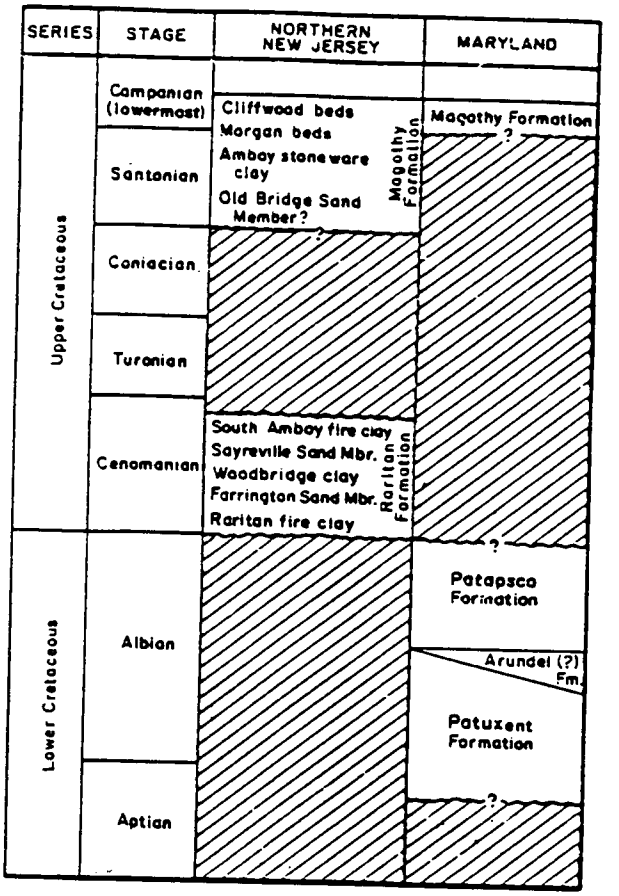


Figure 9. Thickness map of the Potomac Group and the Raritan and Magothy Formations in Camden County.



The lowermost part of the stratigraphic section, the Potomac Group, consists of the Patuxent, Arundel, and Patapsco Formations at the type locality in Maryland. Palynological studies of samples from three sites from the Camden County area by Wolfe and Pakiser (1971) and L. A. Sirkin (written commun., 1971) indicate that only the Upper Patapsco was found at two of the three sites. Berry (1911), from a study of megafossil flora, determined that the sample from a site in the outcrop near Camden is Upper Raritan. However, Wolfe and Pakiser (1971) who examined a sample from the same site indicate an uppermost Patapsco age based on palynologic data. According to Sirkin (written commun., 1971) the uppermost Patapsco can be found at Medford test well (ME 1), but not at the New Brooklyn Park test well (WI 27).

The Raritan Formation at the type locality at Raritan Bay, Middlesex County, was divided into seven units by Ries, Kümmel, and Knapp (1904) and later modified by Berry (1906). Barksdale and others (1943) assigned names to the three sand members. Recent palynological work by Wolfe and Pakiser (1971) and Doyle (1969) indicate that the upper two units, the Amboy stoneware clay and the Old Bridge Sand, are of Magothy age. Wolfe and Pakiser (1971) reassigned the Old Bridge Sand as the basal member of the Magothy Formation. However, the members of the Raritan Formation of the type area in Raritan Bay cannot be traced to the Delaware Valley as distinct lithologic units. Palynologic analysis of core samples from the New Brooklyn test well (WI 27) and the Medford test well (ME 1) indicate the Raritan Formation is present at the two sites (Sirkin, written commun., 1971).

The Magothy Formation in the Raritan Bay area has been re-examined by Owens, Minard, and Sohl (1968). Based on the then unpublished work of Wolfe and Pakiser (1971), Owens, Minard, and Sohl (1968) defined the Magothy as consisting of four units. The total thickness of the Magothy is more than 200 feet in the Raritan Bay area. Members of the Magothy Formation of the Raritan Bay area are not recognizable in the Delaware Valley. Palynological studies by Sirkin (written commun., 1971) indicate that there is about 300 feet of Magothy age sediments at New Brooklyn Park test well (WI 27) and about 100 feet at the Medford test well (ME 1).

Depositional Environment

The Potomac Group and the Raritan and Magothy Formations were deposited in a complex fluvial-deltaic environment (Owens and others, 1968). Figure 10 illustrates the idealized sand-dispersal system showing the various depositional environments for the Eocene deltas of Texas (Fisher and McGowen, 1969). The authors believed that the fluvial-deltaic sediments of the Potomac Group and the Raritan and Magothy Formations have a similar complex depositional history.

In the Camden area the sediments were deposited as part of the ancestral Schuylkill fluvial-deltaic system (Gill and Farlekas, written commun., 1969). Troughs in the bedrock surface represent erosional features that are of Late Cretaceous age or older. These troughs, filled mainly with coarse sands and gravels, have been delineated in Philadelphia by Greenman and others (1961). The sediments were deposited during Cretaceous time in the fluvial part of the system, which

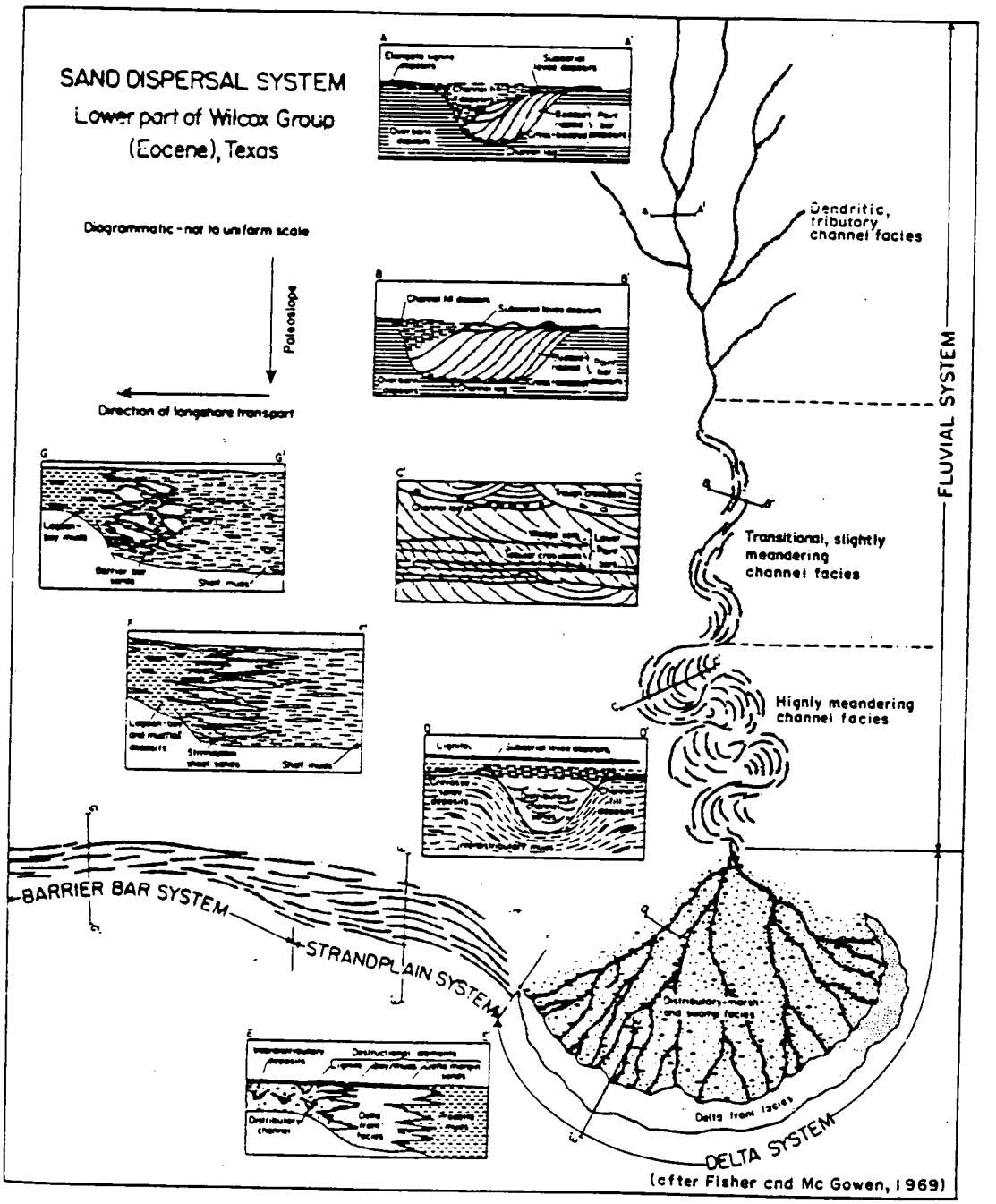


Figure 10. — Idealized sand-dispersal system in various depositional systems, Wilcox Group, Texas.

probably extended from Philadelphia to the area updip from New Brooklyn Park.

A thickness map of the Potomac Group and the Raritan and Magothy Formations is given in figure 9. Also shown is the percentage of sand as estimated from geophysical logs from wells that penetrate the section from the top of the Magothy to the crystalline rocks. The thickness lines show the thickening of the sediments downdip. The percentage of sand indicates greater values in the updip area and lower values in the downdip area. The estimated percentage of sand at the New Brooklyn Park well (WI 27) is 37. Based on the depositional concept developed by Fisher and McGowen (1969) the New Brooklyn Park well is interpreted as being in the distributary channel-marsh and swamp facies. The sediments found in the Haddonfield area are interpreted as including the transitional, slightly meandering channel facies of Fisher and McGowen (1969). The dendritic tributary channel facies is interpreted as occurring in the area from Philadelphia to the northern part of Camden County. The highly meandering channel facies probably occurs in the area downdip from Elm Tree Farms well (VO 12). Lack of data prevents the delineation of the extent of this facies downdip of the Elm Tree Farms area.

Particle-size analysis is available for samples from the New Brooklyn Park test well (WI 27) in Winslow Township (table 5). The particle-size analysis shows the predominant silt and clay values.

Hydrology

The most productive source of ground water in Camden County is the Potomac-Raritan-Magothy aquifer system. The aquifer system is made up of aquifers consisting of sand with some gravel and confining units consisting of silts and clays and is overlain in the outcrop area by highly permeable Pleistocene sand and gravel. The sands are separated into three hydrologic units, an upper, middle, and lower aquifer. The upper unit consists mainly of the sands of the Magothy Formation. The middle and lower units consist mainly of sands of the Raritan Formation and the Potomac Group. The thickness of the three hydrologic units are shown in figures 11, 12, and 13. The lower aquifer in the outcrop area is overlain by and hydraulically connected to the Pleistocene deposits and is a water-table aquifer in Philadelphia. The upper aquifer in the outcrop area is overlain by and hydraulically connected to the Pleistocene deposits in Camden County and is under water-table conditions.

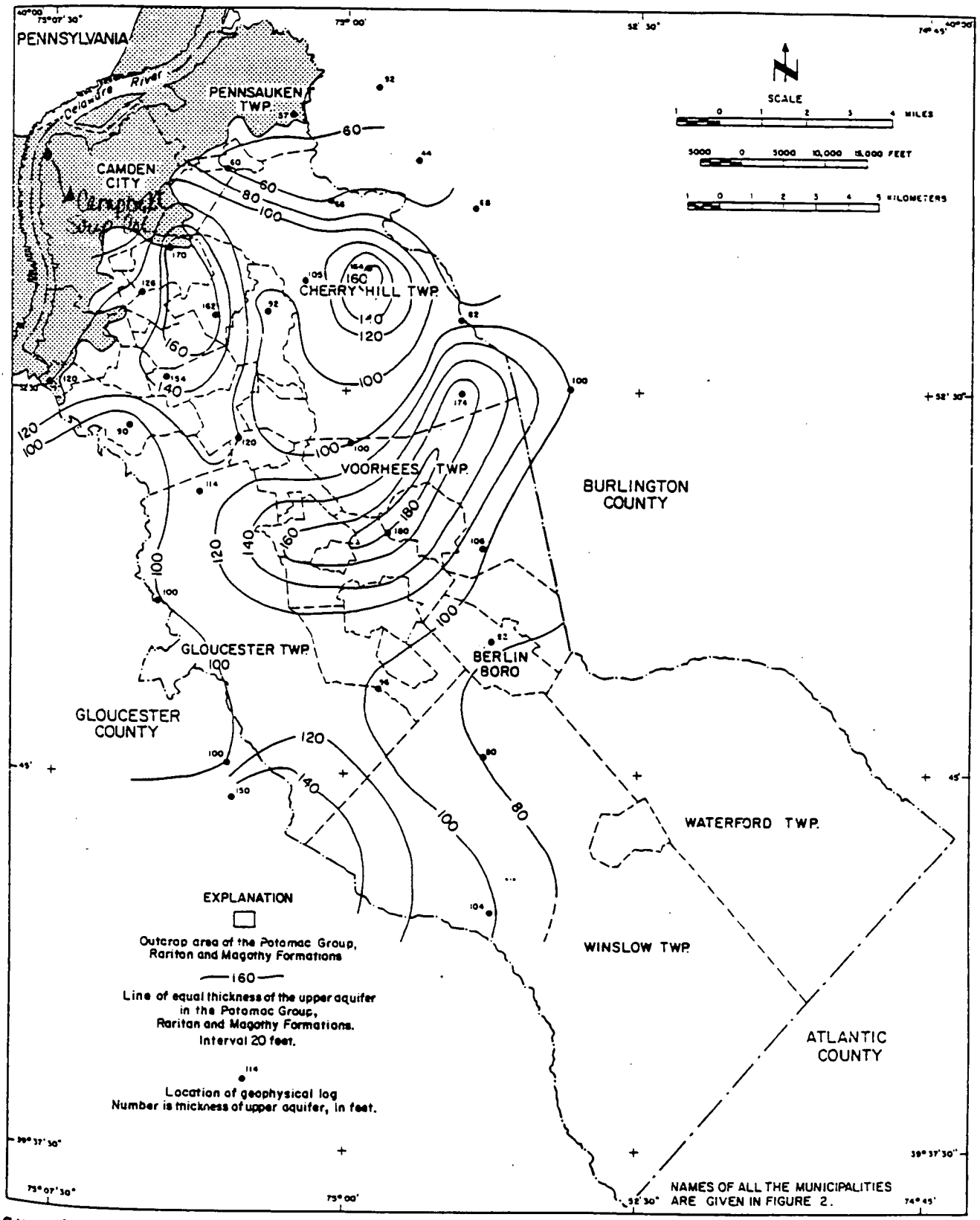


Figure 11. — Thickness map of the upper aquifer in the Potomac-Raritan-Magothy aquifer system in Camden County.

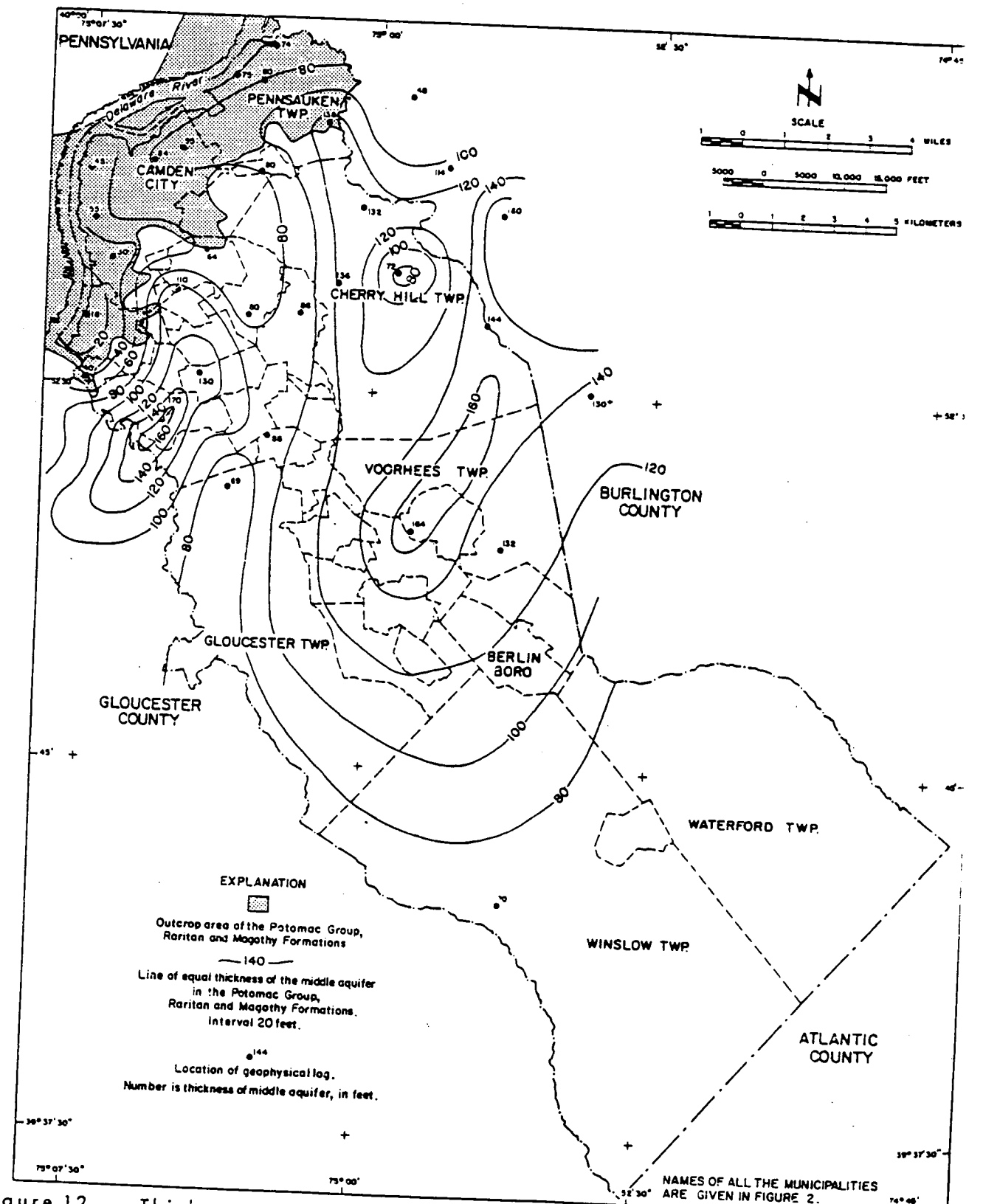


Figure 12. — Thickness map of the middle aquifer in the Potomac-Raritan-Magothy aquifer system in Camden County.

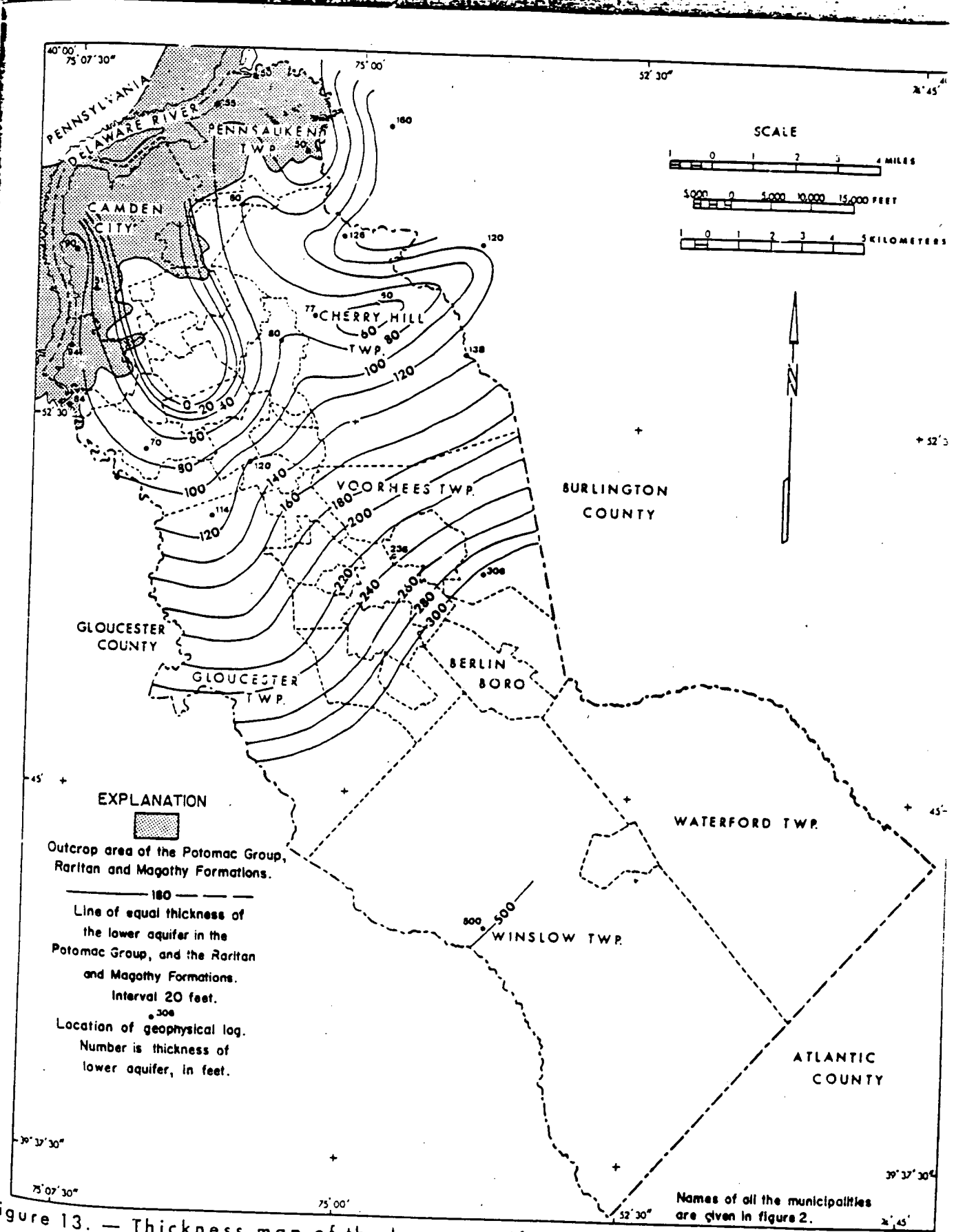


Figure 13. — Thickness map of the lower aquifer in the Potomac-Raritan-Magothy aquifer system in Camden County.

Patterns of Ground-water Movement

Pattern before development.--The natural ground-water flow regimen for the aquifer system prior to development was influenced by topography. The topographically high areas are the natural recharge zones for much of the ground-water system in the Coastal Plain. In areas of topographic highs the prepumping potentiometric surface of each aquifer was greater than that of the aquifer below. This indicates that vertical movement of ground water was downward through the semipervious confining units into the Potomac-Raritan-Magothy aquifer system. The discharge areas were the Delaware River, and to some extent, the topographic lows or stream valleys which cut across the outcrop areas.

The potentiometric map (fig. 14) represents the average natural conditions prior to 1900 for the Potomac-Raritan-Magothy aquifer system in Camden County. Most of the data for the map are from the annual reports of the State Geologist for the period 1888-1909. Water-level data for years after 1900 were used when there was reasonable certainty that the levels were indicative of natural or prepumpage conditions. In Camden County the topographically high recharge area occurs in northern Voorhees Township and southern Cherry Hill Township (fig. 14).

Pattern after development.--The first public-water supply obtained from the Potomac-Raritan-Magothy aquifer system and the hydraulically connected Pleistocene sediments in Camden County was from the Morris well field of the City of Camden in 1898. As the Camden City area's population and industry grew its need for ground water increased. Thompson (1932) describes in detail the ground-water development of the Camden area for 1898-1927. His data for Camden County were used to determine the annual pumpage from the Potomac-Raritan-Magothy aquifer system and the hydraulically connected Pleistocene sediments for 1917-27 shown in figure 15. Withdrawals by industrial wells were estimated by the present authors to be 4 mgd for 1917-27.

The early development of water in the Potomac-Raritan-Magothy aquifer system in Camden County was centered in the vicinity of Camden City, the area containing greatest concentration of population and industry. In later years suburban development had moved southeastward. During the 1950's and 1960's many new public-supply wells were drilled in

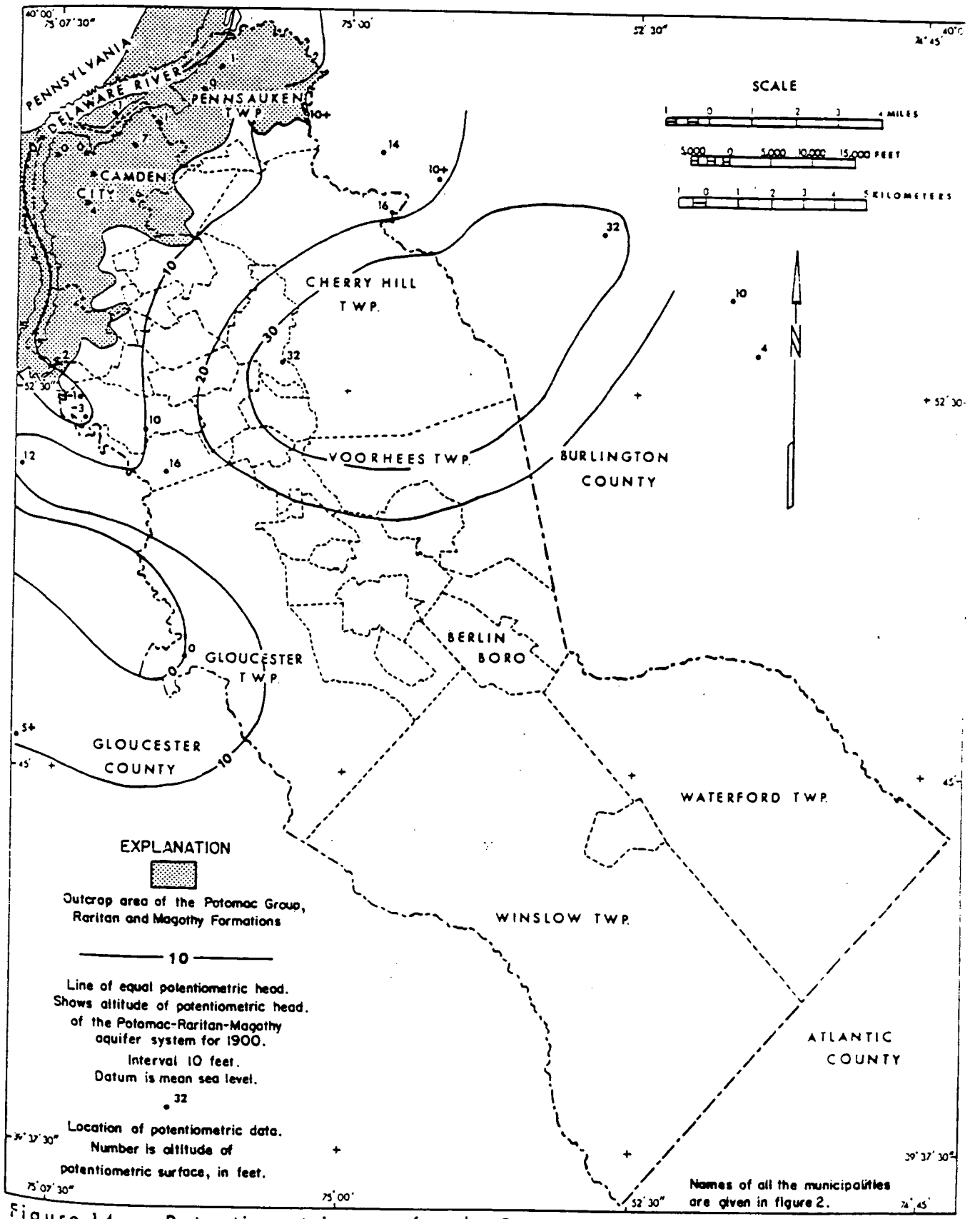


Figure 14. — Potentiometric map for the Potomac-Raritan-Magothy aquifer system in Camden County, 1900.

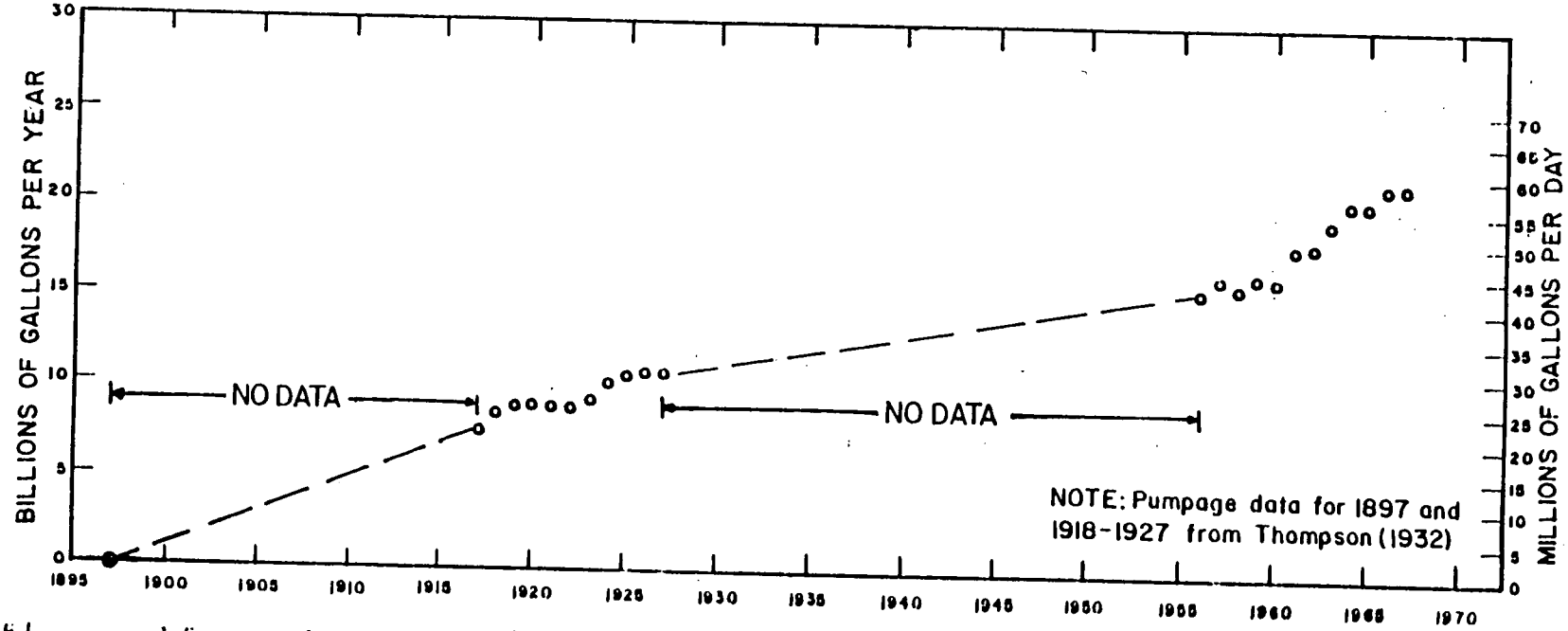


Figure 15. — Pumpage from the Potomac-Raritan-Magothy aquifer system in Camden County, 1897 - 1967.

areas where little or no water had been withdrawn from the Potomac-Raritan-Magothy aquifer system. Figure 16 shows the geographic distribution of the ground-water pumpage in 1966 for Camden County. Data used in figure 16 is tabulated in table 6. The effect of the increasing southeastward movement of demand on the aquifer system can be seen by comparing potentiometric surface maps. Figure 17 shows the 1956 potentiometric surface for the Potomac-Raritan-Magothy aquifer system. The map was developed from data from observation wells and reported data from newly drilled wells from mid-1955 to mid-1957. Figure 18 shows the potentiometric surface for 1968. This map was developed mainly from water-level measurements made over a three-day period from October 17 to October 19, 1968. A significant change in potentiometric surface occurred in the southeastern part of Camden County between 1956 and 1968. Prior to 1956 there was little ground-water diversion in the southeastern part of Camden County. New pumpage in this area after 1956, primarily from the upper and middle aquifer, is the probable cause for the change in potentiometric surface in the southeastern part of Camden County. Consequently, by 1968 a significant head difference existed between the upper and lower aquifer in southeastern Camden County and adjacent Gloucester County. The potentiometric heads for the upper and lower aquifers in the southeastern part of Camden County is shown in figure 18.

Three potentiometric decline maps were constructed from the potentiometric surface maps of the Potomac-Raritan-Magothy aquifer system. They are for 1) 1900 to 1956 (fig. 19), 2) 1956 to 1968 (fig. 20), and 3) 1900 to 1968 (fig. 21). Almost all of the decline from 1900 to 1956 occurred in the northern part of the county. The decline in the potentiometric surface during 1956 to 1968 (fig. 20) occurred throughout the county with the greatest declines in the Cherry Hill Township-Voorhees Township area and Berlin Borough area. From 1900 to 1968 the greatest potentiometric declines (more than 100 feet) occurred in the northcentral part of the county (fig. 21). Withdrawals from the Potomac-Raritan-Magothy aquifer system responsible for the decline in head are shown in figure 15. Pumpage was estimated for periods for which data were not available. Total pumpage from the Potomac-Raritan-Magothy aquifer system in Camden County from 1898 to 1968 based on figure 15 is 800 billion gallons. One-third of that pumpage was withdrawn in 13 years (1956 to 1968), which is 19 percent of the total period of pumpage.

Withdrawals in Philadelphia from the lower aquifer in the Potomac-Raritan-Magothy aquifer system has a direct effect on the potentiometric surface and ground-water flow in the Camden area. Greenman and others (1961) describe the history

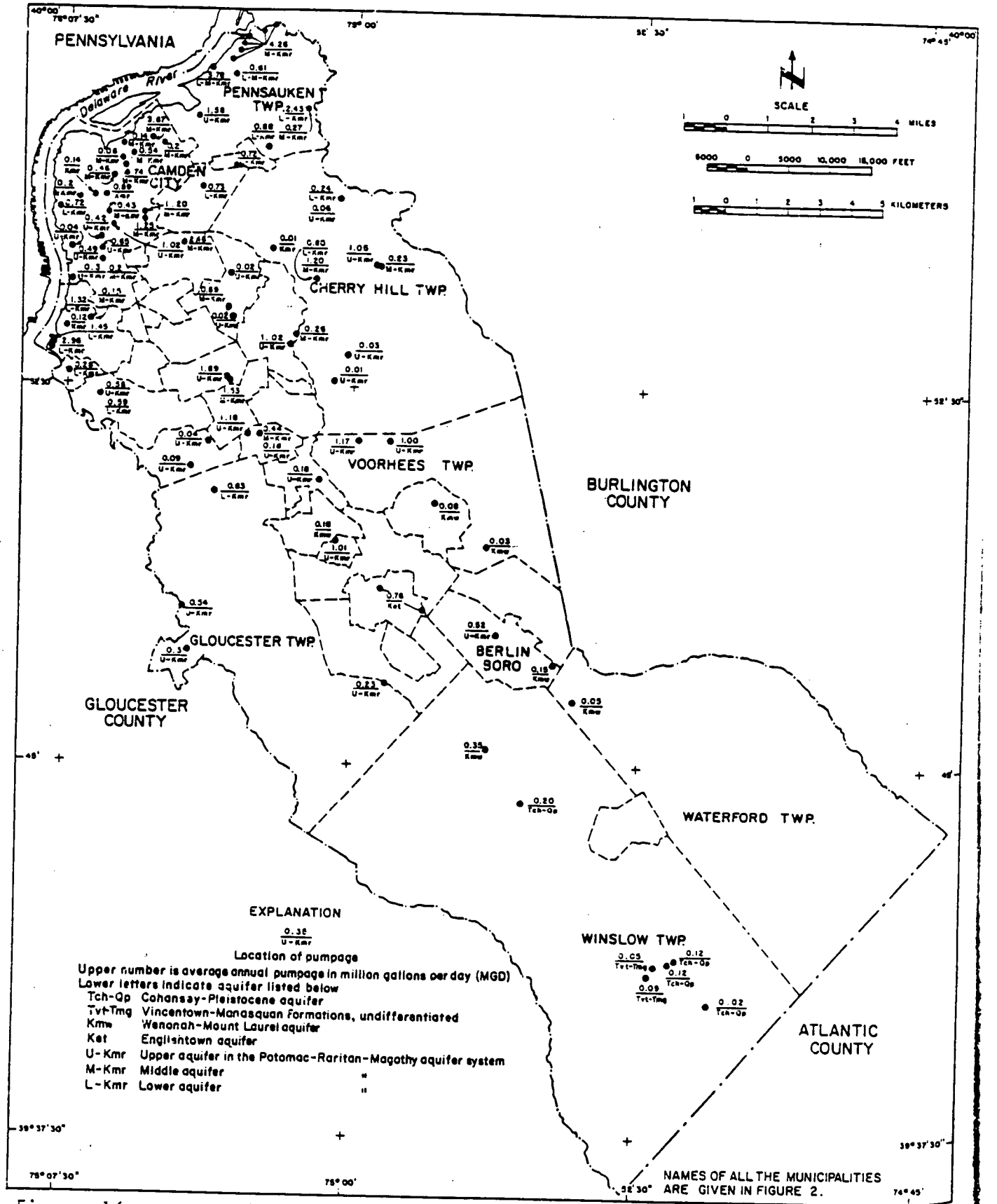


Figure 16. — Map showing the distribution of public and industrial pumpage in Camden County, 1966.

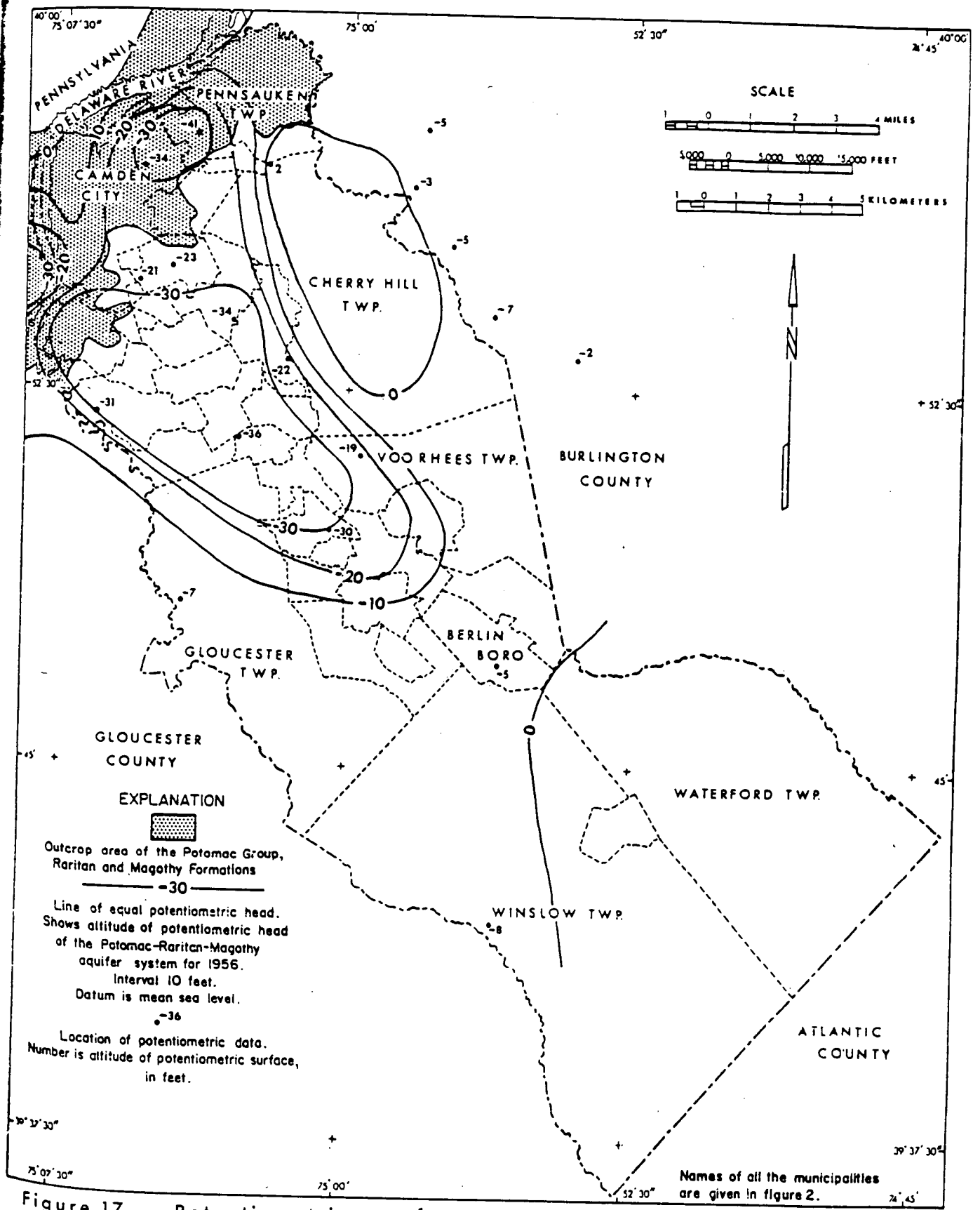


Figure 17. — Potentiometric map for the Potomac-Raritan-Magothy aquifer system in Camden County, 1956.

Campbell Soup Co.

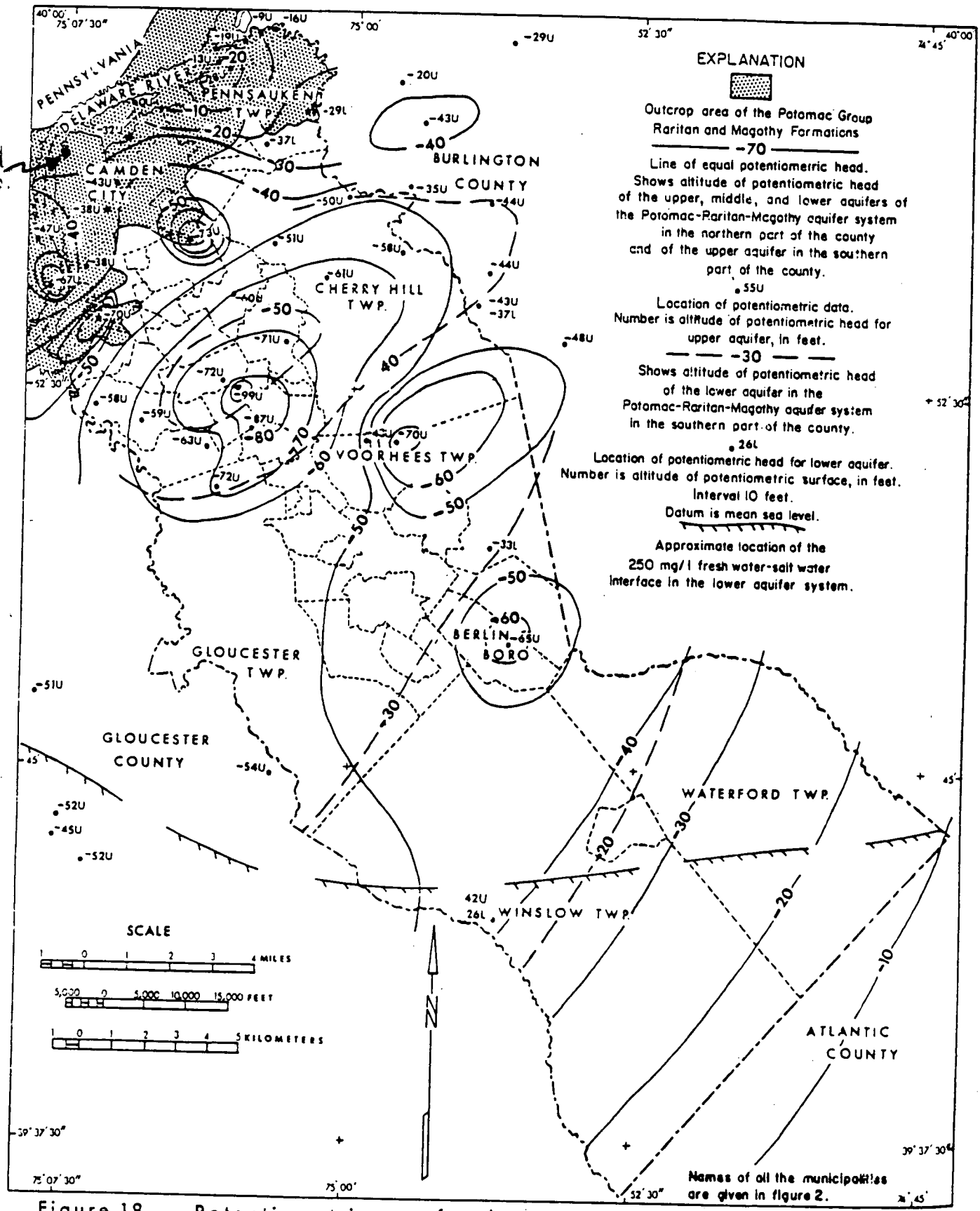


Figure 18. — Potentiometric map for the Potomac-Raritan-Magothy aquifer system in Camden County, October 17-19, 1968.

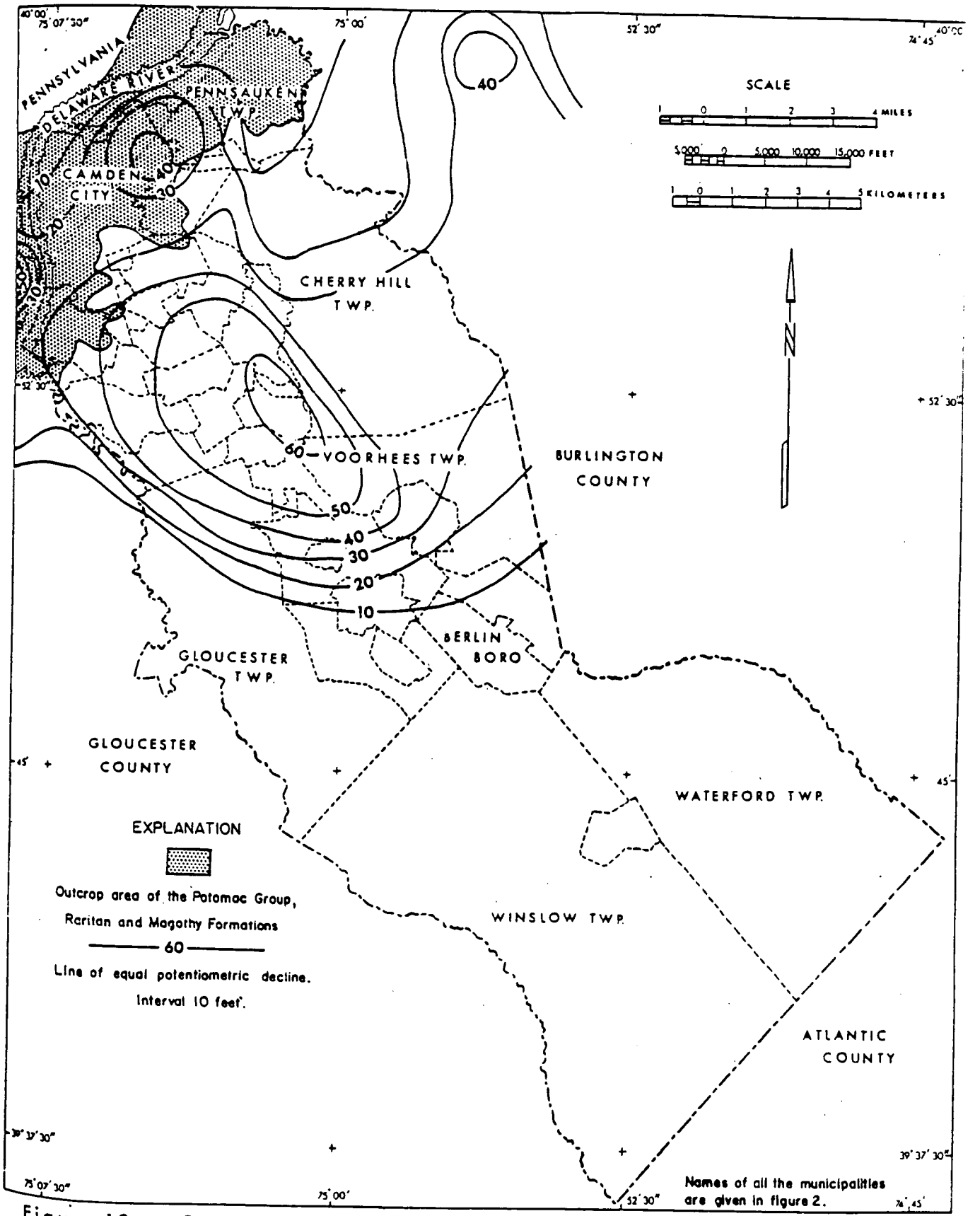


Figure 19. — Potentiometric decline map for the Potomac-Raritan-Magothy aquifer system in Camden County, 1900-56.

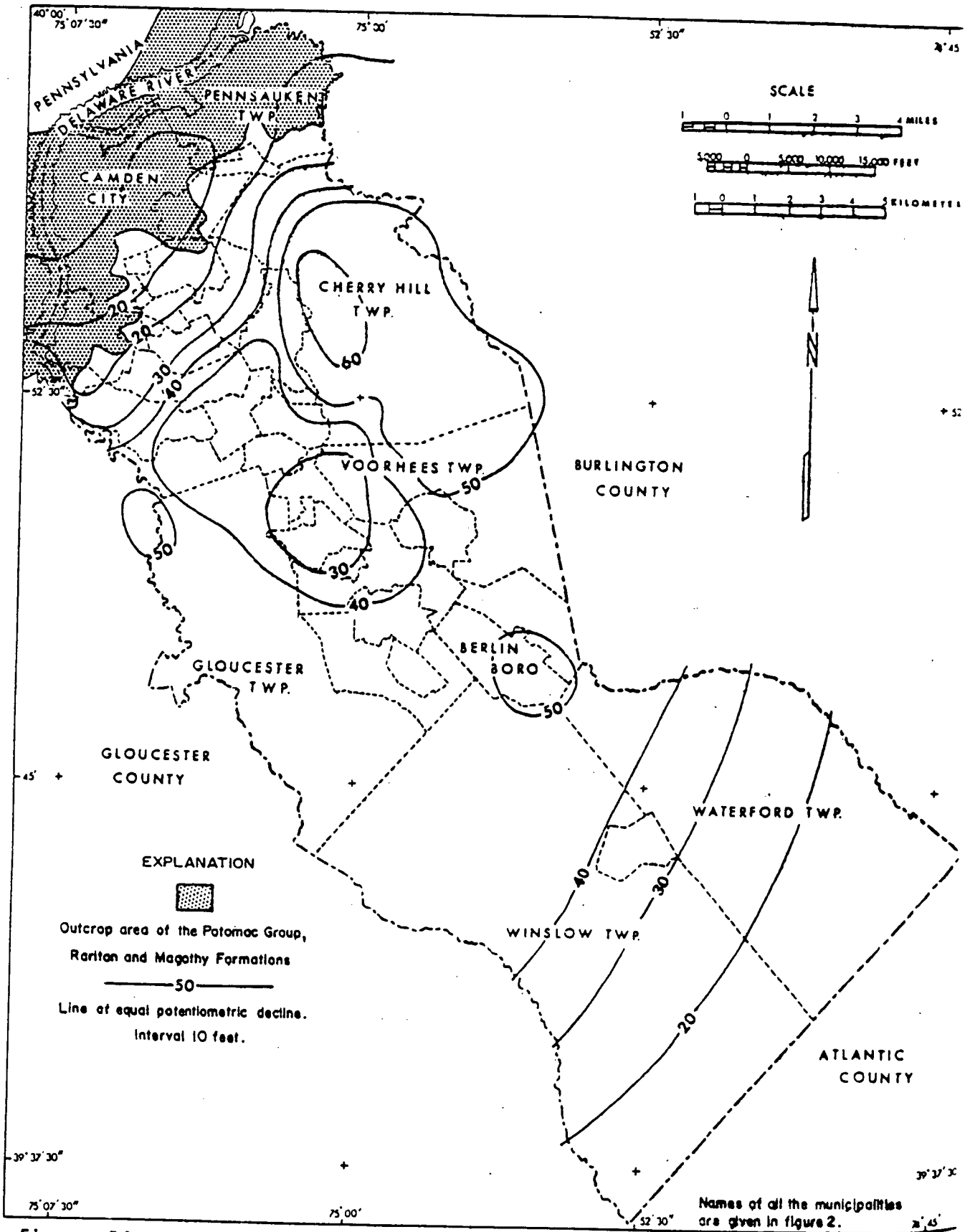


Figure 20. — Potentiometric decline map for the Potomac-Raritan-Magothy aquifer system in Camden County, 1956-68.

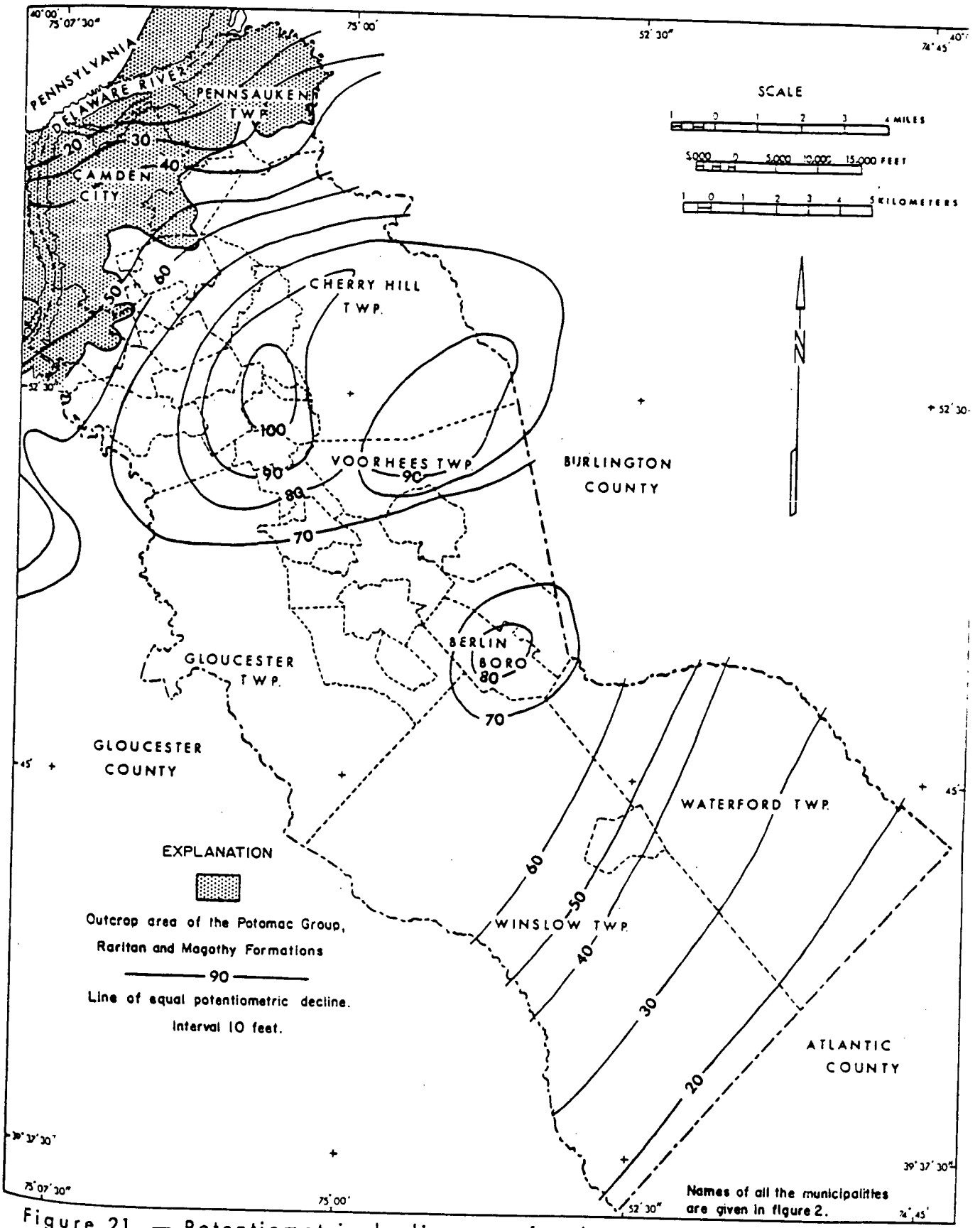


Figure 21. — Potentiometric decline map for the Potomac-Raritan-Magothy aquifer system in Camden County, 1900-68.

of development from the lower aquifer in Philadelphia and present maps of the potentiometric surface for the early 1920's, 1940, 1945, and 1954. The pumpage was approximately 5 mgd in 1920, 15 mgd in 1940, and 23 mgd in 1945. Withdrawals from the lower aquifer in Philadelphia decreased in 1946 and 1947, but again increased to 23 mgd in 1951. The rate of withdrawals declined after 1953 and pumpage in South Philadelphia in 1956 was 18 mgd. No recent complete inventory of withdrawal from the lower aquifer in Philadelphia has been made. However, spot inventories at the U. S. Navy Base and head measurements in 1968 in a few wells in Philadelphia indicate a much lower pumpage. Many wells pumped in 1956 were no longer in use in 1968.

Recharge and Movement of Ground Water

As presented in the section on patterns of ground-water movement the movement of water in the Potomac-Raritan-Magothy aquifer system prior to pumpage was influenced by recharge in topographically high areas while the discharge areas were the Delaware River, and to some extent, the topographic lows or stream valleys which cut across the outcrop areas.

Recharge and movement of water in the Potomac-Raritan-Magothy aquifer system was altered by the large amount of withdrawals, especially in the area near the Delaware River. As pumping increased the gradients were reversed in the water table and artesian aquifers near and under the Delaware River. Greenman and others (1961) suggest that induced recharge occurs from the Delaware River into the aquifers in Philadelphia. They compared the specific conductance of the water from a well located near the Delaware River and the specific conductance of the Delaware River. Fluctuations in specific conductance were similar except that there was a five-month time lag. Barksdale and others (1958) give substantial evidence to show that induced recharge from the Delaware River occurs in the heavily pumped parts of the aquifer near the river. They cite three types of evidence; aquifer test results, temperature fluctuations, and changes in chemical quality. An aquifer test at the Morro Phillips tract in Camden City near the Delaware River indicated a recharge boundary under the river and suggested that after two years of operation a well near the river would obtain 90 percent of its water from the river. Temperatures of water in a well near the river (at Beverly, Burlington County) change seasonally as does the temperature of water in the Delaware River. On the other hand the temperature of the water in a well several miles away from the river (at

Haddon Heights) remains essentially constant (Barksdale and others, 1958, p. 106-108). Changes in chemical quality of water from wells near the river were cited by Barksdale and others (1958) as evidence of induced recharge. Table 7 gives the chemical quality data of two wells, located in Pennsauken Township, used by Barksdale and others (1958, p. 121-123) and also includes more recent data. The water-quality analyses dated 1924 (table 7) were for samples collected just after completion of the wells. As pointed out by Barksdale and others (1958) the dissolved-solids content of the water from well 1 (PE 18), located near the river, more than doubled between 1924 and 1953 while the quality of water from well 4 (PE 21), located one mile from the river, remained the same. Much of the water obtained from well 1 is induced river water; whereas, well 4 receives a much greater part of its water from the aquifer and a lesser amount of water from the Delaware River. Data from samples taken after 1953 from well 1 indicate improved quality for a period of approximately 13 years. This was followed by a decline in quality as evidenced by increasing chlorides, sulfates, and specific conductance. Chlorides were 27 mg/l (milligrams per liter) in 1969, an increase from 8.0 mg/l in 1963. Changes in the quality of the river water probably caused the variation in quality of water in the wells.

Recharge of the aquifer system downdip from the outcrop area is mainly from vertical leakage through the overlying confining unit. In the area downdip of the outcrop there have been significant declines in the potentiometric surface--declines in excess of 100 feet at some locations. The difference in heads between those in the Potomac-Raritan-Magothy aquifer system and the overlying aquifers provides the driving mechanism for downward vertical leakage. The rate of vertical leakage is, with all other factors being equal, probably greater in the downdip area where large head differences occur. In the area near the outcrop the head difference is not as large, and thus the rate of vertical leakage is probably smaller. This area is also closer to the Delaware River, which is a recharge boundary. In addition to recharge of water through the confining units, significant amounts of water are released to the aquifer system from storage within the confining silts and clays in the Potomac Group and the Raritan and Magothy Formations and the overlying confining units.

An additional source of water lies outside of the political boundaries of Camden County. Water moves toward Camden from the adjacent areas outside the county line as the pumping cone of depression expands. Description of the regional pattern of ground-water flow for this aquifer system for the hydrologic unit in southern New Jersey has been studied

in detail by Gill and Farlekas (written commun., 1969).

The source of water in the Potomac-Raritan-Magothy aquifer system in Camden County is therefore 1) precipitation on the outcrop area and induced recharge from streams located in the outcrop area, for example, the Delaware River, 2) recharge through the confining units, 3) water released from storage from the silts and clays of the Potomac Group and Raritan and Magothy Formations and overlying units, and 4) water from the adjacent areas as the cone of depression expands.

Aquifer Characteristics

A number of aquifer tests in the Camden County area for wells tapping the Potomac-Raritan-Magothy aquifer system have been evaluated in the past using the Theis nonequilibrium method (Ferris and others, 1962, p. 92), which assumes that the confining layers are impermeable. Results were reported in Barksdale and others (1958, p. 96-98) and Rush (1968, p. 32-33). Four of these aquifer tests have been re-evaluated (Harold Meisler, written commun., 1973) to include leaky artesian aquifer conditions proposed by Hantush (1960). Two of the four re-evaluated aquifer tests are for wells located in Camden County near the Delaware River and tap the middle aquifer of the Potomac-Raritan-Magothy aquifer system. The results of the test at the site of the Camden Water Department well 14 (CA 18) indicate that the transmissivity ranges from 2,300 to 6,700 ft^2/day (17,000-50,000 gpd/ft) with an average of 4,300 ft^2/day (32,000 gpd/ft^2). The storage coefficient ranges from 1.0×10^{-4} to 3.5×10^{-4} with an average of 1.8×10^{-4}. The re-evaluated results of the aquifer test at the Stockton pumping station (Camden Division) of the New Jersey Water Company indicate that the transmissivity ranges from 3,200 to 3,700 ft^2/day (24,000-28,000 gpd/ft) and the storage coefficient ranges from 3.3×10^{-5} to 1.5×10^{-3}.

Many large diameter high-yielding wells tap the Potomac-Raritan-Magothy aquifer system. The yields of 106 wells in Camden County (diameter 12 inches or greater) range from 455 to 1,900 gpm (gallons per minute) (table 1). The average yield for 106 wells is 1,085 gpm. The specific capacities of these wells are high, indicating a high aquifer transmissivity. The range of specific capacity of 96 wells (diameter 12 inches or greater) tapping the Potomac-Raritan-Magothy aquifer system in Camden County is 6.1 to 80 gpm/ft (gallons per minute per foot of drawdown) (table 1). The average specific capacity of these wells is 29.3

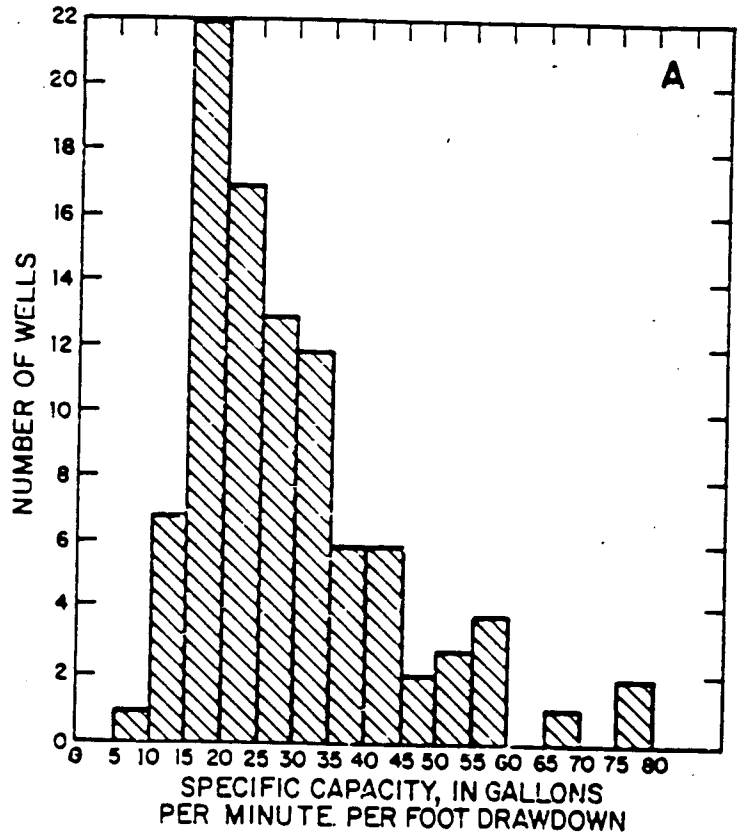
gpm/ft. Two-thirds of the specific capacities range between 15 to 35 gpm/ft. Figure 22A shows the distribution of the specific capacities of the 96 large diameter wells.

Another method for determining the hydraulic properties of aquifers is the specific capacity of a well divided by the length of well screen. The specific capacity of the well per foot of well screen may be more meaningful than specific capacity where the length of well screens differ considerably. The distribution of values of specific capacity per foot of well screen for 95 wells (diameter 12 inches or greater) tapping the Potomac-Raritan-Magothy aquifer system in Camden County is shown in figure 22B. These values range from 0.12 to 2.29 gpm per foot of screen. About 56 percent of the values range between 0.6 and 1.0 gpm per foot of screen. The average specific capacity per foot of well screen is 0.83 gpm per foot of screen. Values of specific capacity per foot of well screen for wells tapping the Potomac-Raritan-Magothy aquifer system located in the outcrop area are generally higher than those located downdip from the outcrop. The average specific capacity per foot of well screen for 60 wells located in the outcrop area is 0.95 gpm per foot of screen and the range is from 0.35 to 2.29 gpm per foot of screen. The average specific capacity per foot of well screen for 35 wells located downdip from the outcrop is 0.52 gpm per foot of screen and the range is from 0.22 to 1.7 gpm per foot of screen. The higher values for wells located in the outcrop area are attributed to better hydraulic properties of the aquifer and proximity to source of recharge, primarily from the Delaware River. This is in agreement with the evidence cited by Barksdale and others (1958) and Greenman and others (1961) indicating recharge from the Delaware River.

Quality of Water

Detailed analysis of water-quality data for the Potomac-Raritan-Magothy aquifer system has been presented in recent publications by Langmuir (1969a and 1969b) and Gill and Farlekas (written commun., 1969). Camden County was one of the counties included in these recent studies. Some of the data used in the recent studies are given in table 4.

Water from the Potomac-Raritan-Magothy aquifer system in a large part of Camden County, with the exception of iron content, meets the State's standards for potable water (New Jersey State Department of Environmental Protection, 1970) with little or no treatment and is suitable for most industrial and agricultural needs. Recent analyses of water from two wells in Camden City suggest that chromium values are equal to or above



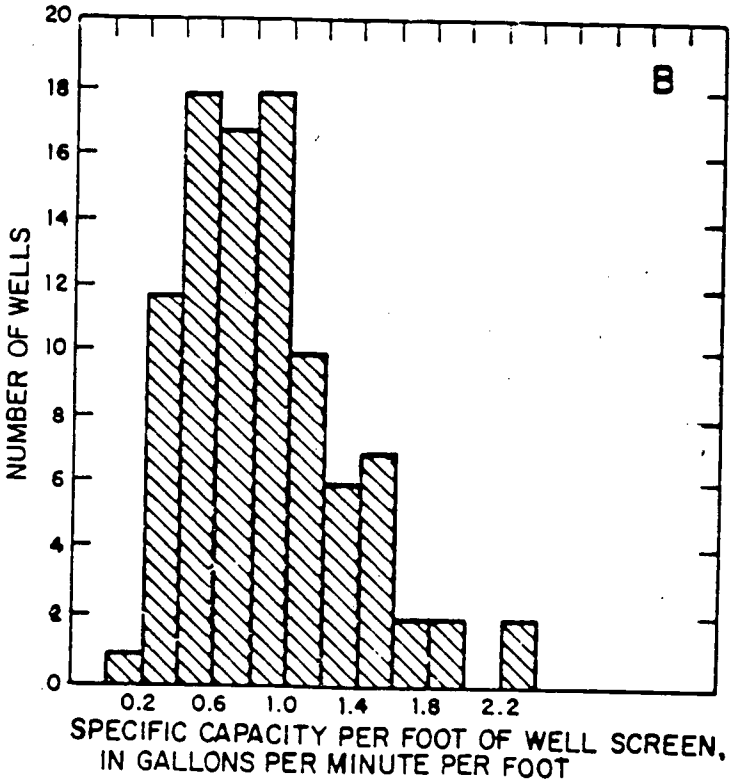


Figure 22. — Distribution of specific capacities of large diameter wells (12 inches or greater) tapping the Potomac-Raritan-Magothy aquifer system in Camden County.

the State's standards. This and additional water-quality problems are described below.

A summary of chemical analyses of water from wells tapping the Potomac-Raritan-Magothy aquifer system in Camden County is shown in table 8. This table gives maximum, average, and minimum parameters for samples from wells located in the outcrop area of the Potomac-Raritan-Magothy aquifer system and from samples from wells located downdip from the same outcrop area. Only the most recent analyses (table 4) were used to determine values shown in table 8.

The quality of water from wells located in the outcrop area of the Potomac-Raritan-Magothy aquifer system in Camden County varies from well to well. The variation is partly dependent on the depth of the well, the nature of the overlying sediments, and on the distance from the Delaware River. Chemical analyses (table 8) indicate that dissolved solids range from 39-445 mg/l; sulfates, 0.8-178 mg/l; and chlorides, 5.5-59 mg/l for samples from wells located in the outcrop area. Hardness ranges from soft to very hard (14-274 mg/l).

The quality of water of the Potomac-Raritan-Magothy aquifer system is, with the exception of iron content, within the State's standards for potable water in the area from the southeast limit of the outcrop area downdip to the vicinity of the New Brooklyn Park observation wells in Winslow Township. Water obtained from wells tapping the aquifer in the area that is overlain by the Merchantville-Woodbury confining unit, excluding the New Brooklyn Park area, is low in dissolved solids (48-150 mg/l), sulfates (2.6-34 mg/l), and chlorides (1.4-18 mg/l). Hardness ranges from soft to moderately hard (14-114 mg/l).

Samples collected in 1961 from the New Brooklyn Park well (WI 27) tapping the upper aquifer indicate chloride concentrations of approximately 4.0 mg/l; whereas, water from well (WI 28) tapping the lower aquifer in 1960 had a chloride concentration of approximately 300 mg/l (Donsky, 1963). Analyses of samples collected in 1972 for these two wells have similar values (table 4). The difference in chloride data from the New Brooklyn Park wells and other wells tapping the Potomac-Raritan-Magothy aquifer system in Ocean and Gloucester Counties (Gill and Farlekas, written commun., 1969) suggests lateral as well as vertical differences in chloride content in the aquifer system. This difference in chloride content as well as other water-quality parameters suggest that an interface exists between the salt water to the southeast and fresh water to the northwest and is represented by a broad zone of diffusion in the aquifer system. The 250 mg/l chloride line

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for the upper aquifer is located several miles southeastward of the 250 mg/l chloride line for the lower aquifer (fig. 19). The 250 mg/l chloride line may be considered the limit of sea-water encroachment, inasmuch as the interface of salt and fresh water probably is not far seaward from this line (Parker, 1964). The high-chloride water in the southeastern part of the Potomac-Raritan-Magothy aquifer system is probably due to brackish-marine water entering the aquifer system during deposition of the sediments or the re-entering of ocean water after changes in sea level.

Water-quality analyses for wells tapping the Potomac-Raritan-Magothy aquifer system in Camden County indicate change in quality of water in the aquifers with time. In some cases the analyses show decreases in chloride and nitrate concentrations over a period of time; whereas, in other cases analyses show increases in chloride, sulfate, and dissolved solids. A summary of chemical analyses for selected wells tapping the Potomac-Raritan-Magothy aquifer system in Camden City for 1923-70 is shown in table 9. Data used in table 9 is from Thompson (1932), Donsky (1963), and table 4.

Chlorides, as reported (Thompson, 1932) for wells at two different sites tapping the upper aquifer in Camden City, were higher than those reported for the same or comparable well samples in 1966-67. The chloride content at one of the sites (Camden City Water Department wells 3-3A) decreased from 51 mg/l in 1928 (Thompson, 1932) to 28 mg/l in 1949 (Donsky, 1963). The chloride content for the same site was 41 mg/l in 1969 (table 4). At the second site (Camden City Water Department wells 6-6N) the chloride content decreased from 72 mg/l in 1932 (Donsky, 1963) to 32 mg/l in 1969 (table 4).

Wells tapping the middle or lower aquifer near the Delaware River generally have shown a deterioration in water quality over a period of time, as indicated by an increase in chloride and sulfate concentrations. Camden City Water Department wells at four sites (1A, 5-5N, 7, and 11) indicate a rise in chloride concentration over a period of years (table 4). There is also a corresponding rise in sulfate concentration in Camden City Water Department wells 1, 3, 4, 5, 6, and 10 (table 4). Water-quality analyses from Camden City wells 13 and 17, which tap the middle or lower aquifer, indicate that there has not been a change in quality at the two sites during the period samples. These two wells are located farther east than the other Camden City wells cited above, suggesting no change in water quality of the middle and lower aquifer in this area.

It can be assumed that water from wells in the Camden City area prior to 1920 probably was of slightly better quality than that reported by Thompson (1932). The change in the quality of water in the shallow and deeper aquifer between 1900 and 1967 as noted above may have been due to contamination from disposal ponds, waste-injection wells, and improperly sealed abandoned wells. The contamination may be similar to that documented by Greenman and others (1961) in adjacent areas of Philadelphia, but on a smaller scale.

Iron in the water of the Potomac-Raritan-Magothy aquifer system is the most troublesome water-quality parameter for many users. New Jersey's Potable Water Standards (1970) recommends a maximum iron concentration of less than 0.3 mg/l for potable supplies; however, most of the water analyses for the aquifer system indicate concentrations greater than 0.3 mg/l. Thus, treatment for iron removal is required for most users. The iron is present in the water as dissolved Fe^{+2} and $FeOH^{+1}$, and as suspended ferric oxyhydroxides, probably caused by the oxidation of ferrous species already in solution (Langmuir, 1969b). Langmuir (1969b) suggests that the oxyhydroxides are mixtures of goethite and amorphous materials with small amounts of hematite.

Samples from wells in the Camden County area were collected and analyzed separately for total iron and ferrous iron, with the difference assumed to be the concentration of particulate ferric hydroxide (Langmuir, 1969a, p. 19). Total iron, therefore, represents the sum of dissolved ferrous iron and colloidal ferric hydroxide. The distribution of total iron and ferrous iron concentrations in water of the Potomac-Raritan-Magothy aquifer system in the vicinity of Camden County as determined by Langmuir (1969b) is shown in figures 23 and 24. In the outcrop area dissolved ferrous or suspended ferric species are generally less than 0.5 mg/l in unpolluted waters. High concentrations in the outcrop area are interpreted by Langmuir (1969b) as the result of local ground-water contamination.

Immediately downdip of the outcrop area the ferrous and ferric iron species increase abruptly to about 7.0 mg/l. The high build-up of ferrous iron species in this area is due to the reaction with the ferrous iron minerals, such as pyrite and siderite, in the Merchantville-Woodbury confining bed. Langmuir (1969b) concluded that the parallel increase in ferric species to 6.0-11 mg/l may be caused by partial oxidation of Fe^{+2} and $FeOH^{+1}$. Total iron concentrations in the water of the Potomac-Raritan-Magothy aquifer system are highest in areas adjacent to the outcrop area. Seaber (1965) in his geochemical analysis of the Englishtown Formation also noted that the

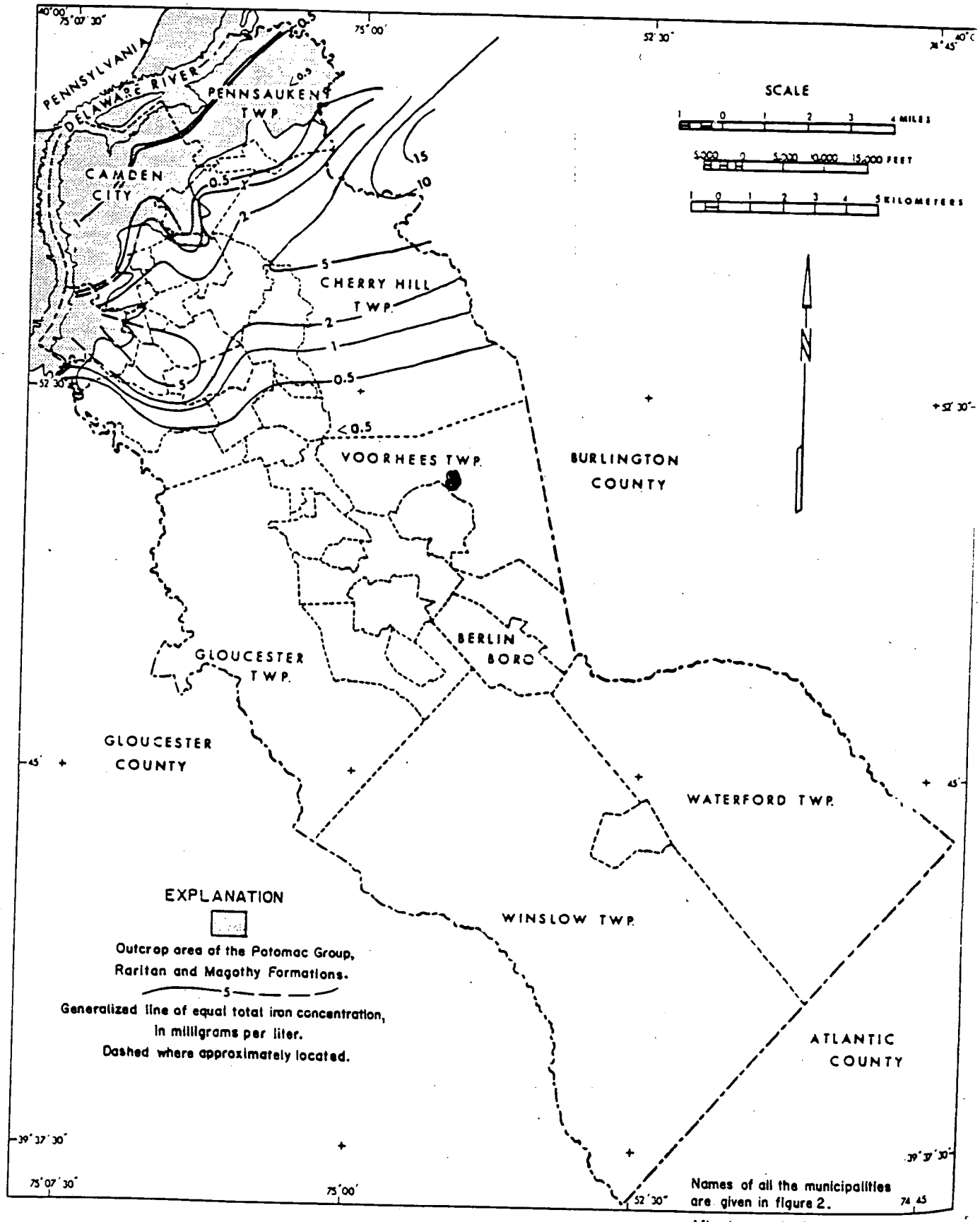


Figure 23. — Map showing generalized total iron concentrations in water of the Potomac-Raritan-Magothy aquifer system in Camden County, 1965.

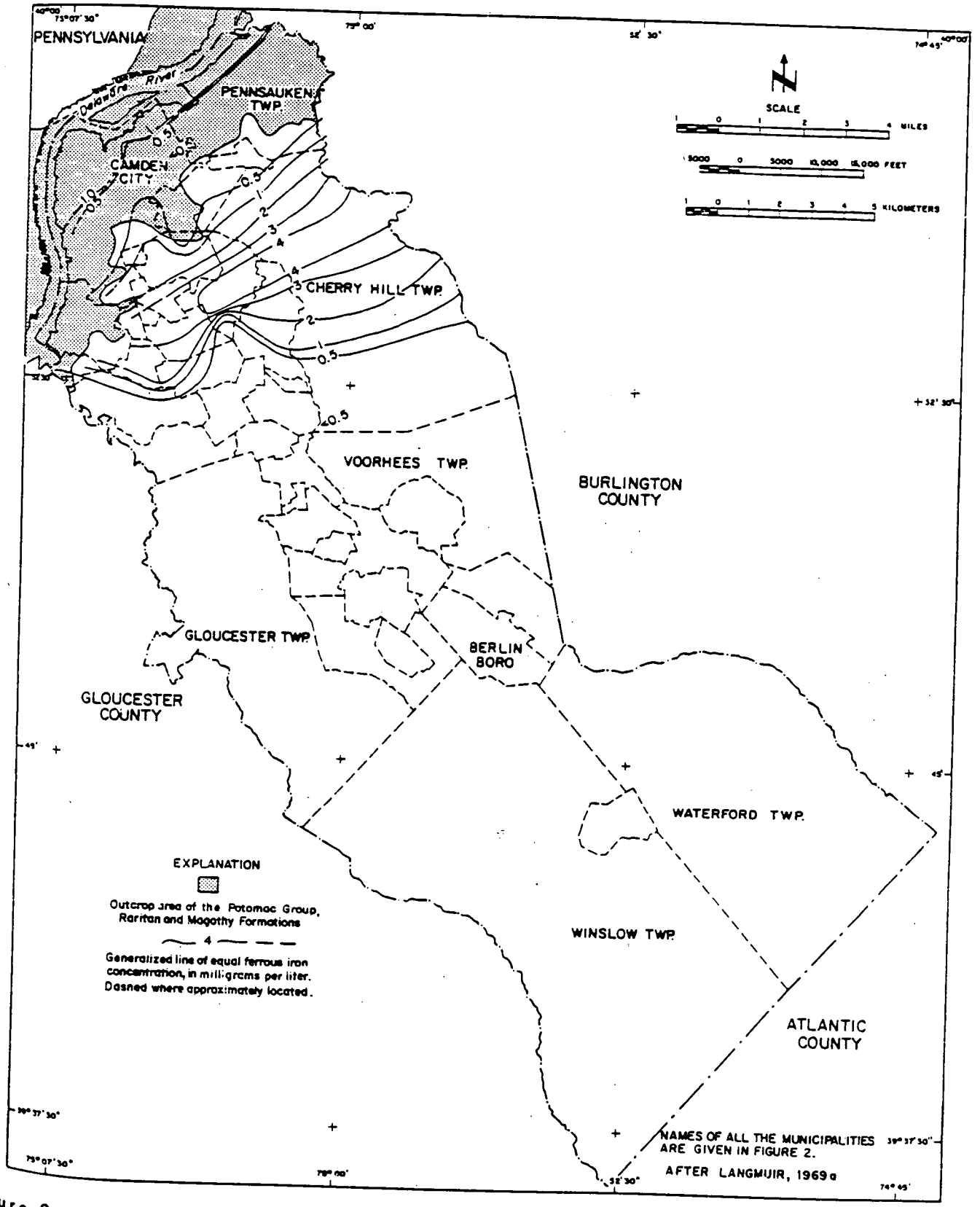


Figure 24. — Map showing generalized ferrous iron concentrations in water of the Potomac-Raritan-Magothy aquifer system in Camden County, 1965.

highest total iron concentrations occurred adjacent to the outcrop area.

Farther downdip both the dissolved ferrous and suspended ferric iron species decrease gradually to less than 0.5 mg/l. Langmuir (1969b) attributed the gradual decline in ferrous species to an increase in the stability of the suspended amorphous material due to aging, coupled with adsorption of ferrous iron by the oxyhydroxides and partial conversion of the amorphous phase to goethite. The decrease in suspended ferric species is interpreted by Langmuir as being caused by cation adsorption, aging, coagulation, and settling.

Ground-Water Contamination

Contamination of the water in the Potomac-Raritan-Magothy aquifer system is presently limited to the area at or near the outcrop. Contamination of the water-table and the artesian aquifer underlying Philadelphia has been thoroughly documented for the period prior to 1956 by Greenman and others (1961). They cite many instances of contamination, with the largest known area of contamination from industrial wastes located in the League Island Trough.

The League Island Trough is shown on the bedrock surface map of the Philadelphia area (fig. 25). The trough, filled with highly permeable sediments, has a northwest trend. A geologic section showing the distribution of the water-bearing sands and gravels from the Schuylkill River in Philadelphia through the Philadelphia Navy Base to the Texas Company's Eagle Point works near Westville, New Jersey, just south of the Camden County line, is shown in figure 26. The lower artesian aquifer (Farrington Sand of Greenman and others, 1961), consisting of sands and gravel immediately above the bedrock, has a direct hydraulic connection with the lower aquifer being tapped by the Texas Company wells in West Deptford Township, Gloucester County.

Barksdale and others (1958, p. 121) stated that, "Originally, the wells at the Navy Base yielded waters that were similar in chemical characteristics to that from the wells of The Texas Co." Greenman and others (1961, plates 21 and 22) indicate high concentrations of sulfates and dissolved solids in the water of the lower artesian aquifer in the League Island Trough in 1956. A sample from one well had more than 1,300 mg/l of sulfate. The movement of ground water with high

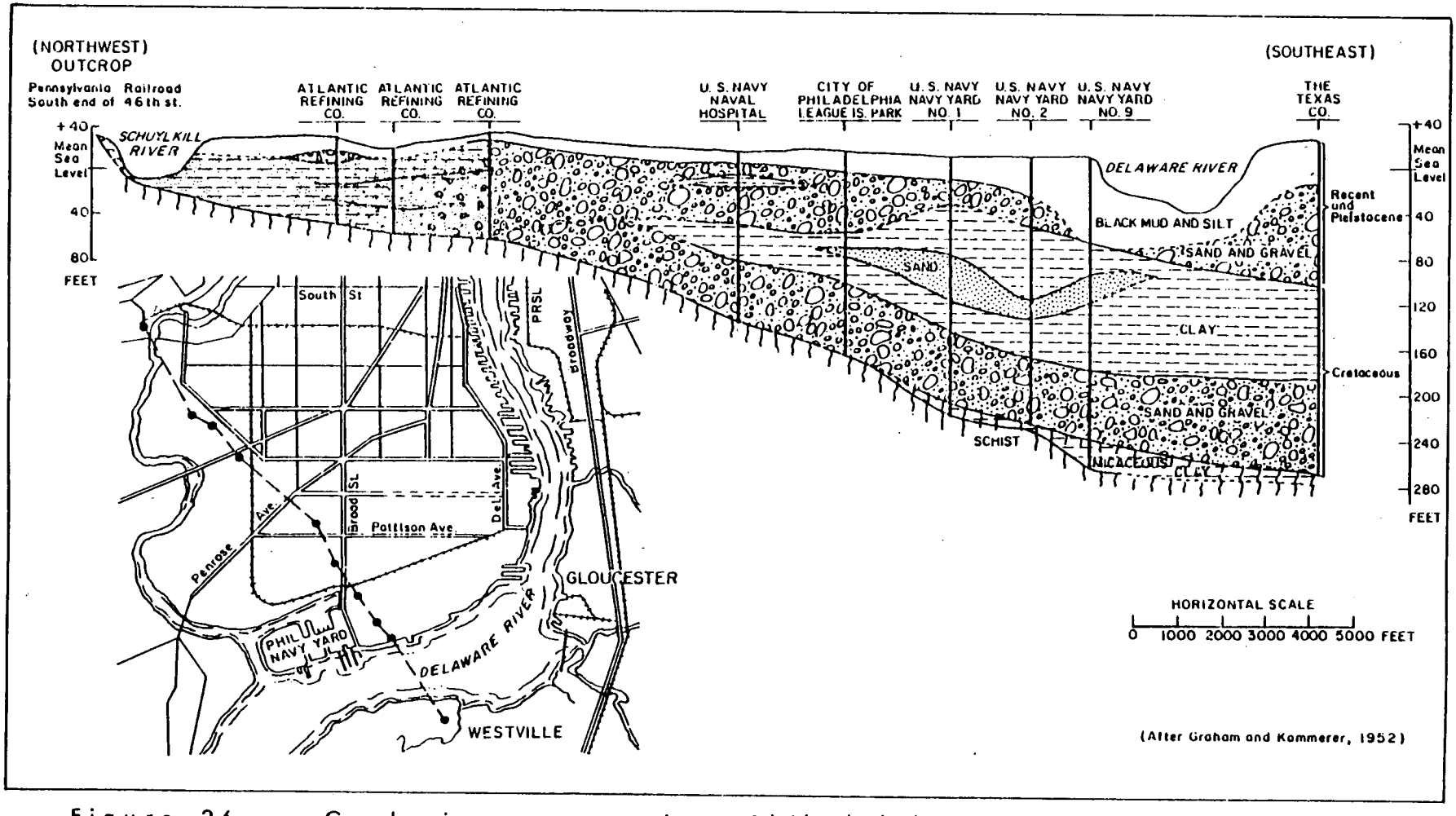


Figure 26. — Geologic cross section, Philadelphia, Pa. - Westville, N. J.

concentration of sulfates and dissolved solids was documented (Greenman and others, 1961) as moving downdip along the trough. The location of the 200 mg/l sulfate line in 1956 (Greenman and others, 1961) is shown in figure 27.

Withdrawal of water at the Philadelphia Navy Base from the lower aquifer had a regional effect on the potentiometric surface. As documented by Greenman and others (1961), heavy pumping at the Philadelphia Navy Base provided the hydraulic gradient that caused the movement of poor quality water from the head of League Island Trough downdip toward the Navy Base. Barksdale and others (1958, p. 121) stated that if pumping were greatly curtailed at the Navy Base the contaminated water would move beneath the river into New Jersey. In 1966 withdrawals at the Navy Base were substantially curtailed, while other wells in the area had been shut down. The Navy Base wells no longer act as a shield for the New Jersey wells and pumping at the Texas Company wells and other wells in New Jersey provided a new hydraulic gradient. A map of the potentiometric surface for the artesian aquifer in the Philadelphia area in October 1968 is shown on figure 28. The area with the lowest potentiometric surface is the area of the Texas Company well field. The nearest pumping to Navy Base wells is the Texas well field. Pumpage for 1968 for this well field was an average of 5.5 mgd. This was the largest total daily pumpage from the lower aquifer in the vicinity. In 1968 water samples of wells tapping the lower aquifer in Philadelphia, Camden area, and the Texas Company well field were collected and analyzed. Figure 27 shows the change in the 200 mg/l sulfate line from 1956 to 1968. The high sulfate, high dissolved-solids water will probably continue to move towards the Texas Company well field if present or increased pumpage rates are maintained.

Additional water samples were collected in 1971 from wells tapping the lower artesian aquifer for chemical (table 4) and trace-element analyses (table 10). The sulfate concentrations are shown in figure 27. Results indicate a decrease in concentrations of sulfate and dissolved solids from 1968 to 1971 in Navy Base wells 4 (PH 11) and 11 (PH 16), but an increase in Navy Base well 9 (PH 13). Navy Base wells 4 and 11 are located downdip from an area that had lower concentrations of sulfate in 1956 (Greenman and others, 1961, plate 22). If movement of ground water did occur downdip, there would be first an increase and then a decrease of sulfate content. Analyses for 1968 and 1971 indicate the decrease in sulfate concentration suggesting movement of ground water downdip. The sulfate concentration updip from Navy Base well 9 in 1956, as given in Greenman and others (1961, plate 22), indicates progressively higher sulfate concentrations.

Analysis of samples taken from Navy Base well 9 in 1967 and 1971 indicates progressively higher sulfate also suggesting movement of ground water downdip toward the Texas Oil Company well field.

The concentration of 24 trace elements in the water samples were obtained from wells tapping the lower aquifer. Results of the analysis (table 10) indicate that only iron and manganese exceed the limits suggested by the U. S. Public Health Service for drinking water. High concentrations of both these elements are not uncommon in the Potomac-Raritan-Magothy aquifer system and have been found in areas of no known contamination resulting from man's activities.

Another area of ground-water contamination, documented by Greenman and others (1961), is the artesian aquifer in the area north of the Philadelphia Navy Base, northwest of the Walt Whitman Bridge. Water from the well (PH 6) at the center of this area had a sulfate concentration of 231 mg/l in 1956 (Greenman and others, 1961, plate 22). Recent analyses of water from wells in this same area (table 4) show a lower sulfate concentration at the center of the area. Water from the same well (PH 6) at the center of the area had a sulfate concentration of 162 mg/l in July 1967 (table 4), a decrease in sulfate concentration of over 30 percent. However, sulfate and dissolved solids in water from PH 7, a well downdip from well PH 6, increased substantially. Sulfate concentration of water from well PH 7 in February 1956 was 18 mg/l (Greenman and others, 1961). In July 1967 the sulfate concentration was 22 mg/l and in May 1971, 131 mg/l (table 4), a 600 percent increase. The increase in sulfate concentration may be due to movement of water from well PH 6 toward well PH 7. Figure 28 shows the area at well PH 7 to be a center of a regional cone of depression. There is a possibility that the contaminated water in the Navy Base area may also move northward due to the much greater gradient in that direction since 1966. Continued surveillance of the quality of ground water would be a method that could be used to determine the change in quality and its possible effect on the ground-water supplies of New Jersey.

Another area of possible water-quality problems in the Potomac-Raritan-Magothy aquifer system in Camden County is located approximately one mile south of the Benjamin Franklin Bridge. Water samples from wells in Philadelphia (one mile south of the Benjamin Franklin Bridge) indicate that water in the lower aquifer contained high sulfates (as much as 284 mg/l) and dissolved solids (as much as 646 mg/l) in 1956 (Greenman and others, 1961, plates 21 and 33). Recent potentiometric measurements in the area show a gradient to the east and to the south; thus, it is possible for this poor quality water to move

to New Jersey. No water samples have been collected from wells in immediately adjacent areas of Camden County. Analyses of water from wells inland show that the quality in the lower aquifer has improved since 1927 (Thompson, 1932) to 1967 (table 4).

Chromium equal to or in excess of the State's standards for potable water has been found in water from two wells in Camden City. Routine sampling of the Camden City Water Department's distribution system by the State in December 1972 showed a high chromium content in the water delivered to a residence. Analyses for chromium from samples obtained from Camden City Water Department public-supply wells in the same area indicated that well 4 (CA 42) had chromium values in excess of the State's standards. Sampling of additional wells located nearby showed even higher chromium values for the West Jersey Hospital well (CA 47). Re-sampling of water from five wells in November 1973 confirmed the high chromium values for two of the five wells. The results of the analysis are given in table 10. The chromium values are 200 µg/l (micrograms per liter) for the West Jersey Hospital well and 50 µg/l for Camden City Water Department well 4. The State's standard for potable water is 50 µg/l for hexavalent chromium. It can be assumed that most of the chromium reported in table 10 is hexavalent chromium. Both wells tap the same sand unit in the aquifer system. The well yielding water with the lower chromium values is located 600 feet east of the West Jersey Hospital well. The potentiometric head measurements made in November and December 1973 show water levels were lower east of the two wells, indicating an easterly hydraulic gradient with ground-water movement in that direction. Water-level measurements made in October 1968 indicated the same gradient direction. This would suggest the chromium content in the ground water in this sand unit would be higher in the area west of the West Jersey Hospital well.

The source of the chromium is not known. However, at least three metal plating companies are located within a radius of 1,600 feet. Analyses of waste water to sewer lines from three metal plating companies for samples collected in February and March 1973 show high chromium values in excess of 9 mg/l (written commun., New Jersey Department of Environmental Protection, 1973).

Barksdale and others (1953) and Greenman and others (1961) have shown that induced recharge from the Delaware River does occur. Deterioration of the quality of the river by man's activities may, in turn, cause water-quality problems in that part of the aquifer being recharged by the river. A "polluted" Delaware River is a possible source of water contamination in

the Potomac-Raritan-Magothy aquifer system in the northeastern part of Camden County.

Salt-Water Encroachment

There are two areas of potential salt-water encroachment in the Potomac-Raritan-Magothy aquifer system in Camden County. One area is along the Delaware River and the second is near the fresh water-salt water interface in Winslow Township.

The Delaware River in the vicinity of Camden County is tidal. Normally salt water from the ocean does not reach the vicinity of Camden. In extended drought, such as that between 1961 and 1966, a decrease in fresh-water inflow to the estuary permits salt water to move farther upstream. For example, in 1965 and 1966 the salt front advanced farther upstream in the Delaware estuary than had been previously recorded. On September 1966 the 250 mg/l chloride line reached the vicinity of the Benjamin Franklin Bridge (Keighton, 1969). At the same time the chloride concentration of the Delaware River at Delaware Memorial Bridge was 4,340 mg/l. Aquifer test and water-quality data given in another section of this report have indicated hydraulic connection between the river water and nearby wells. If the river's chloride content in the Philadelphia-Camden area were to remain at relatively high levels for a long period of time, there could be movement of this water from the river into the aquifer system, especially the middle and upper aquifers.

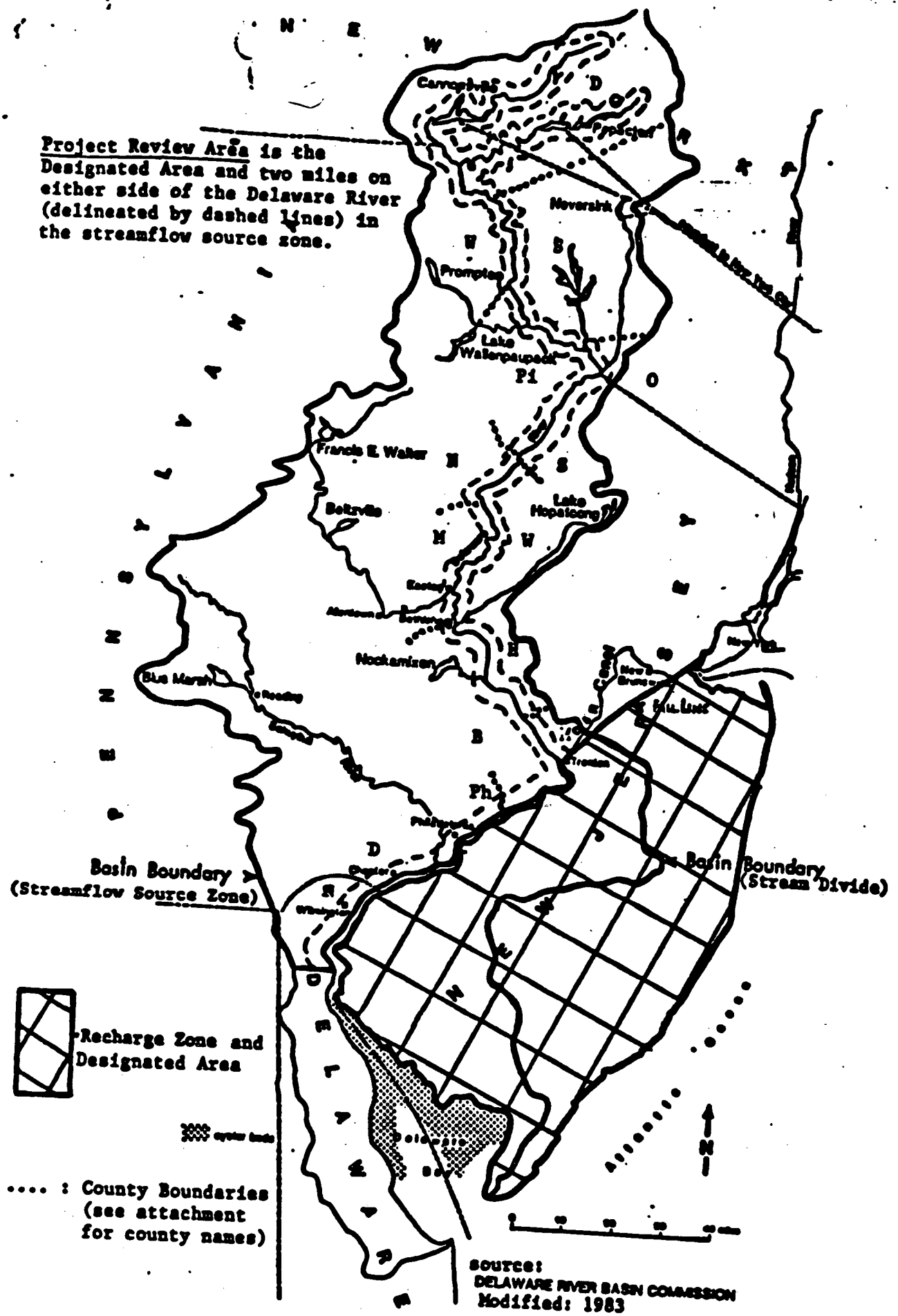
The second area of potential salt-water encroachment in the aquifer system is in the vicinity of the salt water-fresh water interface. The interface in the aquifer system is actually a broad zone. An approximate location in Camden County based primarily on the chloride concentration of the water from the New Brooklyn Park well 1 (WI 27) is shown on figure 18. The chloride concentration of water from this well in 1960 (Donsky, 1961) was 310 mg/l. In 1967 and in 1972 the chloride concentration (table 4) was approximately the same suggesting no change in the lower aquifer for the 12-year period. The chloride concentration of a water sample from the upper aquifer (New Brooklyn Park 2, WI 28) was 4.2 mg/l in 1961 (Donsky, 1961) and 2.5 mg/l in 1972 (table 4).

The ground-water system is a dynamic one. Changes in the hydraulic gradients due to pumping may cause the movement of higher chloride water towards centers of pumpage. Withdrawals from the Potomac-Raritan-Magothy aquifer system in the central part of the county is almost all from the upper

REFERENCE NO. 7

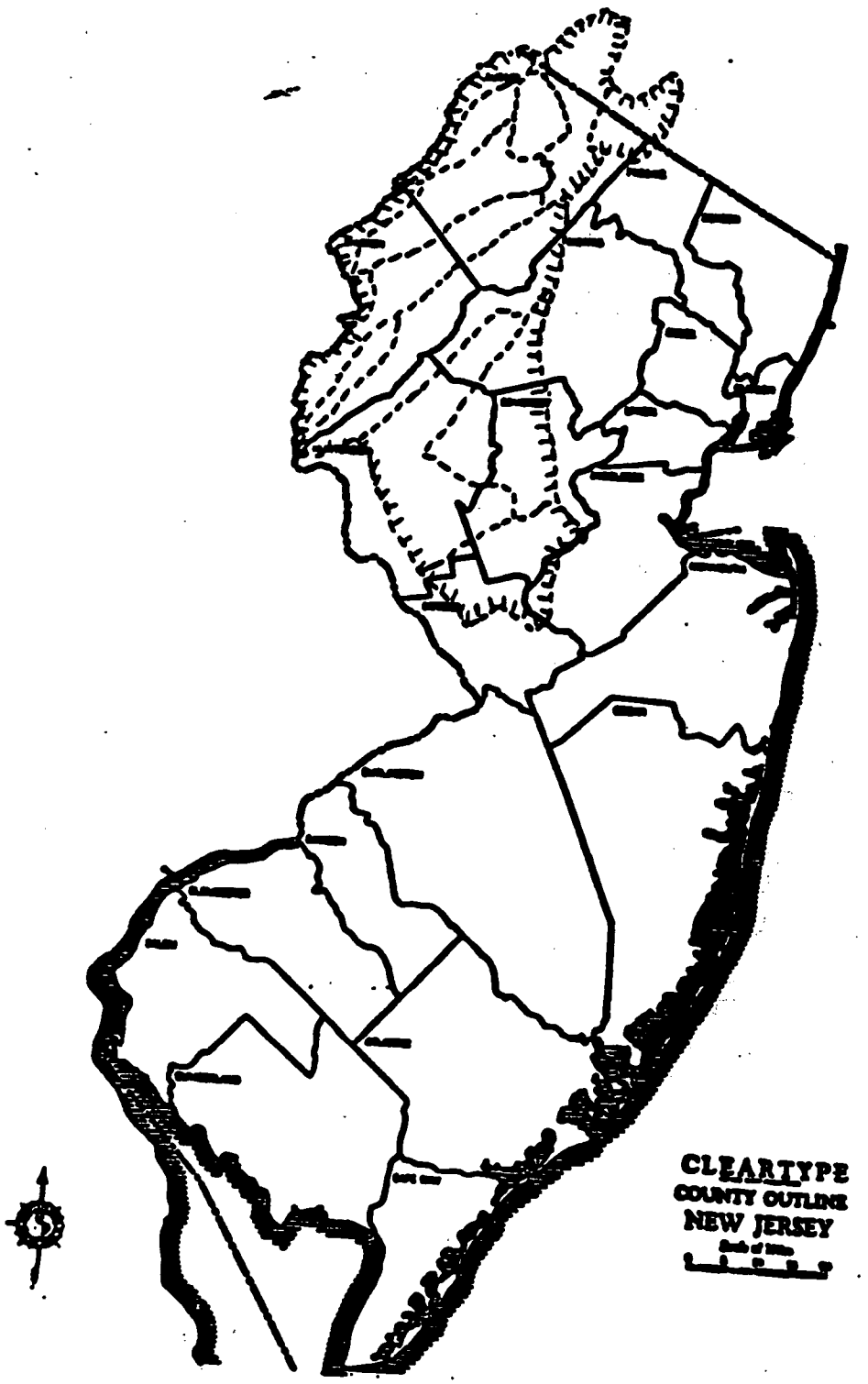
SOLE SOURCE AQUIFERS IN REGION II

Name	State	Citation	Publication Date
Nassau/Suffolk	NY	43 FR 26611	06/21/78
Buried Valley Aquifer System (AS)	NJ	45 FR 30357	05/08/80
Ridgewood Area	NJ	49 FR 2943	01/24/84
Upper Rockaway River Basin	NJ	49 FR 2946	01/24/84
Brooklyn/Queens	NY	49 FR 2950	01/24/84
Schenectady/Niskayuna	NY	50 FR 2022	01/14/85
Clinton Street-Ballpark AS	NY	50 FR 2025	01/14/85
Cattaraugus Creek AS	NY	52 FR 36100	09/25/87
Highlands AS	NJ/NY	52 FR 37213	10/05/87
Cortland-Homer-Preble AS	NY	53 FR 22045	06/13/88
Northwest New Jersey Fifteen Basin AS	NJ/NY	53 FR 23685	06/23/88
New Jersey Coastal Plain AS	NJ	53 FR 23791	06/24/88



NEW JERSEY COASTAL PLAIN SOLE SOURCE AQUIFER

Approximate Boundaries of the Designated Area for the 15 Basin Aquifer Systems (Refer to Exhibit A of the NJDEP Revised Petition for boundary determinations).



COUNTIES IN PROJECT REVIEW AREA

DELAWARE

N : Newcastle

PENNSYLVANIA

B : Bucks
D : Delaware
M : Monroe
N : Northampton
Ph: Philadelphia
Pi: Pike
W : Wayne

NEW JERSEY

H : Hunterdon
M : Mercer
S : Sussex
W : Warren

NEW YORK

D : Delaware
O : Orange
S : Sullivan

ERP No. D-MMS-A02224-00, Rating EO2, 1989 Central and Western Planning Areas Gulf of Mexico Outer Continental Shelf (OCS) Oil and Gas Sales No. 118 and 122, Lease Offerings offshore the coast of Alabama, Mississippi, Louisiana and Texas.

Summary

EPA expressed objections to the proposed action of unrestricted leasing in the Central and Western Gulf. EPA also expressed concern over the lack of any proposed mitigation for possible impacts to deep-water benthic communities. EPA also expressed concern that ozone modeling of the effect of offshore emission on onshore air quality be conducted.

ERP No. D-NPS-K61095-NV, Rating LO, Death Valley National Monument, General Management Plan, Implementation, Inyo and San Bernardino Counties, CA and Nye and Esmeralda Counties, NV.

Summary

EPA expressed a lack of objections to the proposed management plan but noted that future multiple use activities (mining, campgrounds) will require an assessment of air quality, surface water and ground water impacts.

Final EISs

ERP No. F-COE-H30000-IA, Des Moines Recreational River and Greenbelt Area, Development, Operation and Maintenance, Des Moines River, Webster, Hamilton, Boone, Dallas, Polk, and Warren Counties, IA.

Summary

EPA has no objections to this project with the understanding that each unit of the project will be evaluated separately for NEPA compliance at a later date.

ERP No. F-FHW-F40290-WI, WI-TH-83 Improvement, I-94 to Cardinal Lane/WI-TH-16, Funding and 404 Permit, Waukesha County, WI.

Summary

EPA has no objection to this project, long as a minimum of 0.8 acre of additional wetlands are created.

(Note: The above summary should have appeared in the 6-10-88 Federal Register Notice.)

ERP No. F-USN-C85041-NJ, Colts Neck, Naval Weapons Station Earle Family Housing Development, Construction, Mammouth County, NJ.

Summary

EPA's concern regarding the location of the mitigation site has been addressed in this document. In addition, information within the document clarified our questions with respect to the delineation of wetlands, and the point of discharge of the wastewater treatment plant. Accordingly, EPA has no unresolved concerns regarding the implementation of the project as proposed.

ERP No. F-USN-D84005-VA, Empress II Operation, Electromagnetic Pulse, Radiation Environment Simulator for Ships, Chesapeake Bay (West of Bloodsworth Island) and Atlantic Ocean (Virginia Capes Operating Area), off the Coast of VA.

Summary

EPA expressed a preference for the proposed site and requested a thorough monitoring program for the project.

(Note: The above summary should have appeared in the 6-17-88 Federal Register Notice.)

Dated: June 21, 1988.

William D. Dickerson,

Deputy Director, Office of Federal Activities.

[FR Doc. 88-14333 Filed 6-23-88; 8:45 am]

BILLING CODE 6560-50-M

[ER-FRL-3404-3]

Environmental Impact Statements; Availability; Weekly Receipts

Responsible Agency: Office of Federal Activities, General Information (202) 382-5073 or (202) 382-5075. Availability of Environmental Impact Statements, Filed June 13, 1988 Through June 17, 1988. Pursuant to 40 CFR 1506.9.

EIS No. 880189, Draft, BLM, AZ, San Pedro River Riparian Resource Management Plan, Implementation, San Simon Resource Area, Safford District, Cochise County, AZ, Due: September 21, 1988, Contact: Jerrold Coolidge (602) 428-4040.

EIS No. 880190, Draft, DOE, ND, Charlie Creek-Belfield 345 kV Transmission Line Project, Construction, Operation and Maintenance, Implementation, Billings, Stark, McKenzie and Dunn Counties, ND, Due: August 8, 1988, Contact: James D. Davis (406) 657-5525.

EIS No. 880191, Draft, SCS, MD, East Yellow Creek Watershed, Soil Erosion and Flood Damage Reduction Plan, Funding and Implementation, Sullivan, Linn and Charlton Counties, MO, Due: August 8, 1988, Contact: Russell C. Mills (314) 875-5214.

EIS No. 880192, Draft, NPS, AK, Denali National Park and Preserve, Wilderness Recommendations, Designation or Nondesignation, AK, Due: August 29, 1988, Contact: Linda Nebel (907) 257-2654.

EIS No. 880193, Draft, APS, WY, Little Bighorn River, Wild and Scenic River Study, National Wild and Scenic Rivers System, Designation, Bighorn National Forest, Sheridan County, WY, Due: September 22, 1988, Contact: Arthur Bauer (307) 672-6751.

EIS No. 880194, Draft, USN, PA, U.S. Navy Girard Point Site, Sale to the Philadelphia Muncipal Authority for the Establishment of a Steam Generation Facility that Produces Steam for Purchase by the U.S. Navy, City of Philadelphia, PA, Due: August 12, 1988, Contact: Kenneth Petrone (215) 697-6431.

EIS No. 880195, Final, FHW, PA, PA-23/New Holland Avenue/LR-1124, Section B01 Relocation, US 30 to Walnut and Chestnut Streets, Funding and 404 Permit, Manheim, East Lampeter and Lancaster Townships and the City of Lancaster, Lancaster County, PA, Due: July 25, 1988, Contact: Philibert A. Quellet (717) 782-4422.

EIS No. 880196, Draft, FRC, REG, Regulations Governing Independent Power Producers (RM88-4-000) and Regulations Governing Bidding Programs (RM88-5-000), Implementation, Due: August 15, 1988, Contact: Gilda Rodriquez (202) 357-8155.

EIS No. 880197, Draft, SCS, MS, Whites Creek, Watershed Protection and Flood Prevention Plan, Funding, Possible 404 Permit and Implementation, Webster County, MS, Due: August 8, 1988, Contact: L. Peter Heard (601) 965-5205.

EIS No. 880198, Draft, EPA, FL, CF Mining Complex II, Open Pit Phosphate Mine and Beneficiation Plan, Construction and Operation, NPDES and 404 Permits, Hardee County, FL, Due: August 8, 1988, Contact: Maryann Gerber (404) 347-3776.

Dated: June 21, 1988.

William D. Dickerson,

Deputy Director, Office of Federal Activities.

[FR Doc. 88-14352 Filed 6-23-88; 8:45 am]

BILLING CODE 6560-50-M

[FRL-3340-F]

[redacted] Final Determination

AGENCY: U.S. Environmental Protection Agency.

ACTION: Notice.

SUMMARY: Notice is hereby given that, pursuant to section 1424(e) of the Safe Drinking Water Act, the Administrator of the U.S. Environmental Protection Agency (EPA) has determined that the

New Jersey Coastal Plain Aquifer System, underlying the New Jersey Coastal Plan Area, is the sole or principal source of drinking water for the Counties of Monmouth, Burlington, Ocean, Camden, Gloucester, Atlantic, Salem, Cumberland, Cape May and portions of Mercer and Middlesex Counties, New Jersey, and that the acquifer, if contaminated, would create a significant hazard to public health. As a result of this action EPA will review Federally-assisted projects (projects which receive Federal financial assistance through a grant, contract, loan guarantee, or otherwise) proposed for construction in a project review area which includes the New Jersey Coastal Plain Area and a portion of the aquifer streamflow source zone. The streamflow source zone includes upstream portions of the Delaware River Basin in the States of Delaware, New Jersey, New York and Pennsylvania. Federally-assisted projects will be reviewed to ensure that they are designed and constructed so that they do not create a significant hazard to public health. Projects outside of the project review area but within the streamflow source zone will be reviewed if they require an Environmental Impact Statement (EIS).

DATES: This determination shall be promulgated for purposes of judicial review at 1:00 P.M. Eastern Time on July 7, 1988. This determination shall become effective on August 8, 1988.

ADDRESSES: The data on which these findings are based, detailed maps of the New Jersey Coastal Plain Area and the project review area, a compilation of public comments and the Agency's response to those comments, are available to the public and may be inspected during normal business hours at the U.S. Environmental Protection Agency, Water Management Division, 26 Federal Plaza, New York, New York 10278. In addition, copies of a map showing the designated area and a responsiveness summary to public comment are available upon request.

FOR FURTHER INFORMATION CONTACT: John Malleck, Chief, Office of Ground Water Management, Water Management Division, 26 Federal Plaza, New York, New York 10278 (212) 264-5635.

SUPPLEMENTARY INFORMATION: Notice is hereby given that pursuant to section 1424(e) of the Safe Drinking Water Act (42 U.S.C., 300f, 300h-3(e), Pub. L. 93-523), the Administrator of the U.S. Environmental Protection Agency (EPA) has determined that the New Jersey Coastal Plain Aquifer System, underlying the New Jersey Coastal Plain Area, is the sole or principal source of drinking water for the Counties of Monmouth, Burlington, Ocean, Camden, Gloucester, Atlantic, Salem, Cumberland, Cape May and portions of Mercer and Middlesex Counties, New Jersey. Pursuant to section 1424(e), Federally-assisted projects proposed for construction in the New Jersey Coastal Plain Area and the project review area within portions of its streamflow source zone will be subject to EPA review. The streamflow source zone for the New Jersey Coastal Plain Aquifer System includes upstream portions of the Delaware River Basin in the States of Delaware (New Castle County), New Jersey (Mercer-part, Hunterdon-part, Sussex-part, and Warren Counties), New York (Delaware, Orange, Sullivan and Ulster Counties), and Pennsylvania (Berks-part, Bucks, Carbon-part, Chester-part, Delaware, Lackawanna-part, Lancaster, Lehigh, Luzerne-part, Monroe Montgomery, Northampton, Philadelphia, Pike, Schuykill and Wayne Counties). The project review area includes that portion of the streamflow source zone which lies within two miles of the Delaware River in the States of New Jersey (in Mercer, Hunterdon, Sussex and Warren Counties), Delaware (in New Castle County), Pennsylvania (in Delaware, Philadelphia, Bucks, Monroe, Northampton, Pike and Wayne Counties) and New York (in Delaware, Orange and Sullivan Counties).

I. Background

Section 1424(e) of the Safe Drinking Water Act states: (e) If the Administrator determines, on his own initiative or upon petition, that an area has an aquifer which is the sole or principal drinking water source for the area and which, if contaminated, would create a significant hazard to public health, he shall publish notice of that determination in the Federal Register. After the publication of any such notice no commitment for Federal financial assistance (through a grant, contract, loan guarantee, or otherwise) may be entered into for any project which the Administrator determines may contaminate such aquifer through a recharge zone so as to create a significant hazard to public health, but a commitment for Federal financial assistance may, if authorized under another provision of law, be entered into to a plan or design the project to assure that it will not so contaminate the aquifer.

On December 4, 1978 the Environmental Defense Fund, Inc. and the Sierra Club New Jersey Chapter petitioned the EPA Administrator to determine that the Counties of Monmouth, Burlington, Ocean, Camden, Gloucester, Atlantic, Salem, Cumberland, Cape May and portions of Mercer and Middlesex Counties, New Jersey, constitute an area whose aquifer system is "the sole or principal drinking water source for the area and which, if contaminated, would create a significant hazard to public health." On March 21, 1979, EPA published the petition in the Federal Register. Public hearings on the petition request were held May 1, 15 and 17, 1979 in Lindenwold, Trenton, Freehold and Pomona, New Jersey. A May 19, 1983 Federal Register notice announced the availability of additional technical information and the extension of public comment period to July 15, 1983.

II. Basis for Determination

Among the factors to be considered by the Administrator in connection with the designation of an area under section 1424(e) are:

(1) Whether the aquifer is the area's sole or principal source of drinking water and (2) whether contamination of the aquifer would create a significant hazard to public health.

On the basis of information available to this Agency, the Administrator has made the following findings, which are the basis for the determination noted above:

(1) The New Jersey Coastal Plain Area depends upon the underlying Coastal Plain Aquifer System for seventy-five (75) per cent or more of its drinking water to serve 3 million people.

(2) Data show that the formations of the New Jersey Coastal Plain Area are hydrologically interconnected such that they respond collectively as an interrelated aquifer system.

(3) If the aquifer system were to become contaminated, exposure of the persons served by the system would constitute a significant hazard to public health.

(4) Alternative supplies capable of providing fifty (50) per cent or more of the drinking water to the designated area are not available at similar economic costs.

The New Jersey Coastal Plain Aquifer System is highly susceptible to contamination through its recharge zone from a number of sources, including but not limited to, chemical spills, leachate from landfills, stormwater runoff, highway de-icing, faulty septic systems, wastewater treatment systems and waste disposal lagoons. The aquifer is also susceptible to contamination to a lesser degree from the same sources, through its streamflow source zone. Since ground-water contamination can be difficult or impossible to reverse

completely and since the aquifer in this area is solely or principally relied upon for drinking water purposes by the population of the New Jersey Coastal Plain Area, contamination of the aquifer could pose a significant hazard to public health.

III. Description of the New Jersey Coastal Plain Area Aquifer System, Its Recharge Zone and Its Streamflow Source Zone

The New Jersey Coastal Plain Aquifer System consists of a wedge-shaped mass of unconsolidated sediments composed of clay, silt, sand and gravel. The wedge thins to a feathered edge along the Fall Line and attains a thickness of over 6,000 feet at the tip of Cape May County, New Jersey.

These sediments range in age from Cretaceous to Holocene and can be classified as continental, coastal or marine deposits. There are five major aquifers within the Coastal Plain Aquifer System. They are the Potomac-Raritan-Magothy Aquifer System, Englishtown Aquifer, Wenonah-Mount Laurel Aquifer, Kirkwood Aquifer and the Cohansey Aquifer. Natural recharge to the New Jersey Coastal Plain Aquifer System occurs primarily through direct precipitation on the outcrop area of the geologic formations. A smaller component of natural recharge to the deeper layers of the system occurs by vertical leakage from the upper layers. This accounts for a small percentage of the total amount of recharge; however, over a large area and a long period of time the amount of water transmitted can be significant.

The New Jersey Coastal Plain Aquifer discharges to the surface through streams, springs and evapotranspiration. Many streams ultimately flow into bays or directly into the ocean. Development of the ground-water reservoir as a water supply source constitutes another discharge component which today accounts for a significant portion of discharge from the overall system. In certain areas (e.g. along the Delaware River) heavy pumping has caused a reversal in the normal discharge from the aquifer (Raritan-Magothy) such that the surface stream (Delaware River) now recharges the aquifer. This phenomenon implies that, in addition to the New Jersey Coastal Plain Area, the Delaware River Basin within Delaware, New Jersey, Pennsylvania and New York must be regarded as a streamflow source zone (an upstream headwaters area which drains into a recharge zone), which flows into the Coastal Plain Area.

IV. Information Utilized in Determination

The information utilized in this determination includes the petition, written and verbal comments submitted by the public, and various technical publications. The above data are available to the public and may be inspected during normal business hours at the U.S. Environmental Protection Agency, Region II, Water Management Division, 26 Federal Plaza, New York, New York 10278.

V. Project Review

When the EPA Administrator publishes his determination for a sole or principal drinking water source, no commitment for Federal financial assistance may be may if the Administrator finds that the Federally-assisted project may contaminate the aquifer through a recharge zone so as to create a significant hazard to public health . . . Safe Drinking Water Act section 1424(e), 42 U.S.C. 300h–3(e). In many cases, these Federally-assisted projects would also be analyzed in an "Environmental Impact Statement" (EIS) under the National Environmental Policy Act (NEPA), 42 U.S.C. 4332(2)(C). All EISs, as well as any other proposed Federal actions affecting an EPA program or responsibility, are required by Federal law (under the so-called "NEPA/309" process) [1] to be reviewed and commented upon by the EPA Administrator. Therefore, in order to streamline EPA's review of the possible environmental impacts on designated aquifers, when an action is analyzed in an EIS, the two reviews will be consolidated, and both authorities will be cited. The EPA review (under the Safe Drinking Water Act) of Federally-assisted projects potentially affecting sole or principal source aquifers, will be included in the EPA review (under the "NEPA/309" process) of any EIS accompanying the same Federally-assisted project. The letter transmitting EPA's comments on the final EIS to the lead agency will be the vehicle for informing the lead agency of EPA's actions under section 1424(e).

All Federally-assisted proposed projects will be reviewed, within the New Jersey Coastal Plain Area (Counties of Monmouth, Burlington, Ocean, Camden, Gloucester, Atlantic, Salem, Cumberland and Cape May, and portions of Mercer and Middlesex Counties, New Jersey (as delineated on maps included in the petition), and that portion of the streamflow source zone which lies within two miles of the Delaware River in the States of New Jersey (in Mercer, Hunterdon, Sussex and Warren Counties), Delaware (in New Castle County), Pennsylvania (in Delaware, Philadelphia, Bucks, Monroe, Northampton, Pike and Wayne Counties) and New York (in Delaware, Orange and Sullivan Counties) (as delineated on maps included in the public record). Outside the New Jersey Coastal Plain Area and further than two miles from the Delaware River in the streamflow source zone, only those Federally-assisted proposed projects requiring the preparation of an EIS will be reviewed. The Agency has chosen a two-mile limit for the project review area along the Delaware River based on the climate and hydrologic setting of the area. The two-mile distance is consistent with the two-mile review radius included in the EPA guidelines for Ground-Water Classification and is protective of human health.

VI. Summary and Discussion of Public Comments

There has been much controversy over the possible designation of this aquifer system. The majority of the comments from the original 1979 public hearings were in direct opposition to such a designation. More than half of all responses received were against designation. Several commenters felt constrained by the original comment period and thereby requested an extension. EPA complied with this request on two occasions, once by announcing at the four public hearings it held throughout the area under consideration that the agency had extended the formal comment period from May 14, 1979, to December 31, 1979, and again in a May 19, 1983 Federal Register Notice that announced the availability of additional information and extension of the public comment period to July 15, 1983. Although a number of ground-water protection measures are available at the Federal, State and local level, none of these, either individually or collectively, permit EPA to act as directly as would a sole source aquifer designation in the review and approval of Federally-assisted projects. In addition, EPA feels that the sole source project review process will foster integration rather than duplication of environmental review efforts. Memoranda of Understanding have been negotiated with various Federal agencies with the purpose of streamlining the review process and minimizing project delays. Most of the commenters expressed concern that a

[1] 42 U.S.C. § 7609 requires EPA to conduct this review. The "309" in a "NEPA/309" derives from the original source of this general requirement: Section 309 of the Clean Air Act.

designation would be a duplication of efforts already existing on the state and local levels. Some commenters felt that a sole source aquifer designation would give EPA the power to reject any applications for Federally-funded projects indiscriminately and to delay any project underway. Another main concern of many commenters was that a designation would cause a strong negative economic impact on the area in question and curtail needed development, thus eliminating jobs. EPA is sympathetic to the concerns of the commenters; however, the Agency feels that a sole source aquifer designation would not interfere with economic development. Federal financial assistance will be withheld only in those instances where it is determined that a proposed project may contaminate the aquifer so as to create a significant hazard to public health and no acceptable remedial measures are available to prevent the potential hazard.

Dated: June 16, 1988.

Lee M. Thomas,

Administrator.

[FR Doc. 88-14293 Filed 6-23-88; 8:45 am]

BILLING CODE 6560-50-M

[OPTS-59245; FRL-3404-5]

Toxic and Hazardous Substances; Certain Chemicals Premanufacture Notices

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: Section 5(a)(1) of the Toxic Substances Control Act (TSCA) requires any person who intends to manufacture or import a new chemical substance to submit a premanufacture notice (PMN) to EPA at least 90 days before manufacture or import commences. Statutory requirements for section 5(a)(1) premanufacture notices are discussed in the final rule published in the Federal Register of May 13, 1983 (48 FR 21722). In the Federal Register of November 11, 1984 (49 FR 46066) (40 CFR 723.250), EPA published a rule which granted a limited exemption from certain PMN requirements for certain types of polymers. Notices for such polymers are reviewed by EPA within 21 days of receipt. This notice announces receipt of nine such PMNs and provides a summary of each.

DATES: Close of Review Periods:

Y 88-192, 88-193—June 5, 1988.
Y 88-194—June 7, 1988.
Y 88-195—May 17, 1988.
Y 88-196—June 8, 1988.
Y 88-197—June 14, 1988.
Y 88-198—June 16, 1988.
Y 88-199—June 10, 1988.
Y 88-200—June 23, 1988.

FOR FURTHER INFORMATION CONTACT: Stephanie Roan, Premanufacture Notice Management Branch, Chemical Control Division (TS-794), Office of Toxic Substances, Environmental Protection Agency, Rm. E-611, 401 M Street SW., Washington, DC 20460 (202) 382-3725.

SUPPLEMENTARY INFORMATION: The following notice contains information extracted from the non-confidential version of the submission provided by the manufacturer on the PMNs received by EPA. The complete non-confidential document is available in the Public Reading Room NE-G004 at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday, excluding legal holidays.

Y 88-192

Manufacturer. Confidential.
Chemical. (G) Hydroxy function acrylic resin.
Use/Production. (S) Coatings. Prod. range: Confidential.

Y 88-193

Manufacturer. Confidential.
Chemical. (G) Polyurethane resin.
Use/Production. (S) Coating. Prod. range: Confidential.

Y 88-194

Manufacturer. Sybron Chemicals Inc.
Chemical. (G) Copolymer of aliphatic esters of 2-propenoic acid with homocyclic and heterocyclic aromatic vinyl compounds, reaction production wiyh aliphatic polyam ne.
Use/Production. (G) Waste and process water purification. Prod. range: Confidential.

Y 88-195

Manufacturer. Confidential.
Chemical. (G) Dibasic acid polyol polyester.
Use/Production. (G) Used in coatings. Prod. range: Confidential.

Y 88-196

Manufacturer. Confidential.
Chemical. (S) Rosin, dicyclopentadiene, dimer fatty acid polymer.
Use/Production. (S) Printing ink vehicles. Prod. range: 3,000,000-3,700,000 kg/yr.

Y 88-197

Manufacturer. Reichhold Chemicals, Inc.
Chemical. (G) Sunflower oil alkyd.
Use/Production. (S) Architectural trade sales coating. Prod. range: Confidential.

Y 88-198

Manufacturer. Confidential.
Chemical. (G) Aliphatic polyester urethane.
Use/Production. (G) Coatings. Prod. range: Confidential.

Y 88-199

Manufacturer. C.J. Osborn.
Chemical. (G) Polyester.
Use/Production. (S) Pigmented and clear finish. Prod. range: Confidential.

Y 88-200

Manufacturer. Confidential.
Chemical. (G) Styrene/acrylic copolymer.
Use/Production. Coatings and inks. Prod. range: Confidential.

Date: June 13, 1988.

Steve Newburg-Rinn,

Acting Chief, Public Data Branch, Information Management Division, Office of Toxic Substances.

[FR Doc. 88-14292 Filed 6-23-88; 8:45 am]

BILLING CODE 6560-50-M

FEDERAL COMMUNICATIONS COMMISSION

Public Information Collection Requirement Submitted to Office of Management and Budget for Review

June 16, 1988.

The Federal Communications Commission has submitted the following information collection requirement to OMB for review and clearance under the Paperwork Reduction Act of 1980 (44 U.S.C. 3507).

Copies of this submission may be purchased from the Commission's copy contractor, International Transcription Service, (202) 857-3800, 2100 M Street NW., Suite 140, Washington, DC 20037. For further information on this submission contact Judy Boley, Federal Communications Commission, (202) 632-7513. Persons wishing to comment on this information collection should contact Yvette Flynn, Office of Management and Budget, Room 3235 NEOB, Washington, DC 20503, (202) 395-3785.

OMB Number: 3060-0025.
Title: Application for Restricted Radiotelephone Operator Permit—Limited Use.
Form Number: FCC 755.
Action: Revision.
Respondents: Individuals or households.

competition, employment, investment, productivity, innovation, or the ability of United States enterprises to compete in domestic or export markets. Today's action only provides for an in-depth review of ground water protection measures, incorporating State and local measures whenever possible, for only these projects which request Federal financial assistance.

Dated: June 1, 1988.

Valdas V. Adamkus,

Regional Administrator.

[FR Doc. 88-14050 Filed 6-22-88; 8:45 am]

BILLING CODE 6560-50-M

[FRL-34029]

Sole Source Aquifer Determination for Fifteen Basin Aquifer Systems of New Jersey et al.

AGENCY: Environmental Protection Agency.

ACTION: Notice.

SUMMARY: In response to a petition from the New Jersey Department of Environmental Protection (NJDEP), notice is hereby given that the Region II Regional Administrator of the U.S. Environmental Protection Agency (EPA) has determined that the 15 basin aquifer systems of northwest NJ, including the Delawanna Creek, Flat Brook, Lopatcong Creek, Millstone River, Musconetcong River, North Branch Raritan River, Papakating Creek, Paulins Kill, Pequest River, Pochuck Creek, Pohatcong Creek, South Branch Raritan River, Shimmers Brook, Van Campens Brook and Wallkill River Basin Aquifer Systems, underlying all of Warren County, NJ; and portions of Sussex, Passaic, Morris, Middlesex, Hunterdon, Mercer and Somerset Counties, NJ, and Orange County, NY, satisfy all determination criteria as a Sole Source Aquifer (SSA), pursuant to section 1424(e) of the Safe Drinking Water Act. The basin aquifer systems of northwest NJ are the sole source of drinking water for their aquifer service area; there are no viable alternative drinking water sources of sufficient supply; and, if contamination were to occur, it would pose a significant hazard to the public health.

As a result of this action, all Federal financially-assisted projects proposed for the area will be subject to EPA review to ensure that these projects are designed and constructed such that they do not bring about, or in any way contribute to, conditions creating a significant hazard to public health.

DATES: This determination shall be promulgated for purposes of judicial review at 1:00 p.m. Eastern time on July 7, 1988.

ADDRESSES: The data upon which these findings are based are available to the public and may be inspected during normal business hours at the U.S. Environmental Protection Agency, Region II, Office of Ground Water Management, Room 842, 26 Federal Plaza, New York, NY 10278.

FOR FURTHER INFORMATION CONTACT: John S. Malleck, Chief, Office of Ground Water Management, EPA Region II, 26 Federal Plaza, Room 842, New York, NY 10278, (212) 264-5635.

SUPPLEMENTARY INFORMATION:

I. Backgroumd

Section 1424(e) of the Safe Drinking Water Act (SDWA) (42 U.S.C. 300h-3(e), Pub. L. 93-523) states:

> If the Administrator determines, on his own initiative or upon petition, that an area has an aquifer which is the sole or principal drinking water source for the area and which, if contaminated, would create a significant hazard to public health, he shall publish notice of the determination in the Federal Register. After the publication of any such notice, no commitment for Federal financial assistance (through a grant, contract, loan guarantee, or otherwise) may be entered into for any project which the Administrator determines may contaminate such aquifer through a recharge zone so as to create a significant hazard to public health, but a commitment may, if authorized under another provision of law, be entered into to plan or design the project to assure that it will not so contaminate the aquifer.

In November 1985, NJDEP petitioned EPA to declare the aquifer systems of the Coastal Plain, Piedmont, Highland, and Valley and Ridge Physiographic Provinces, as defined in the petition, a SSA under the provisions of the SDWA. The area specified in the petition submitted by NJDEP included the entire State of New Jersey except for the City of Trenton within the Coastal Plain and Piedmont Provinces in west-central New Jersey, and 69 communities within the Piedmont Province in northeast New Jersey.

In June 1987, NJDEP began to revise their petition to include only areas which were not designated previously, or petitioned for designation prior to their original petition. The revised petition uses a surface water drainage basin approach to define aquifer systems.

Initially 21 basin aquifer systems were to be included in the revised petition. However, the NJDEP determined that four of these were not eligible for SSA designation because of an insufficient ground water dependency. NJDEP developed the necessary documentation for the remaining 17. Subsequently, EPA determined that the NJDEP's ground water use methodology did not consider the entire aquifer service area populations. NJDEP revised the ground water use characterization to consider the entire aquifer service area, and another basin aquifer system was determined to be ineligible for SSA designation because of an insufficient ground water dependency. This reduced the number of basin aquifer systems under consideration to 16.

EPA determined that the Whippany River Basin, one of the 16, was already designated as part of the Buried Valley Sole Source Aquifer (45 FR 30537, May 8, 1980). Therefore, the area recommended for designation corresponds to the 15 basin aquifer systems of northwest New Jersey.

Public hearings were held on March 23, 1988 at the Sussex County Community College, Sparta, NJ, and on March 24, 1988 at the Hunterdon County Cooperative Extension Center, Flemington, NJ, in accordance with all applicable notification and procedural requirements. Most comments received during the comment period were in favor of designation.

II. Basis for Determination

Among the factors considered by the Regional Administrator as part of the technical review process for designating an area under section 1424(e) were: (1) Whether the aquifer is the sole or principal source (more than 50%) of drinking water for the defined aquifer service area, and that the volume of water available from all alternate sources is insufficient to replace the petitioned aquifer; and (2) whether contamination of the aquifer would create a significant hazard to public health. On the basis of technical information available to EPA at this time, the Regional Administrator has made the following findings in favor of designating the 15 basin aquifer systems of northwest NJ as a sole source aquifer:

1. The 15 basin aquifer systems supply more than 50 percent of the drinking water to their defined aquifer service area, and therefore, are the sole or principal source of drinking water for the residents of that area.

2. There are no reasonable alternative sources capable of supplying a sufficient quantity of drinking water to the population served by the petitioned aquifer systems.

3. The basin aquifer systems of northwest New Jersey are considered to be highly vulnerable to contamination, due to the thinness of the soils over much of the area, the shallow depth to

ground water, and the fractured nature of the bedrock. Potential sources of contamination include transportation routes, septic systems, highway, rural and urban run-off, commercial and industrial facilities, and agricultural practices. If the basin aquifer systems were to become contaminated, it would create an significant hazard to public health.

III. Description of the 15 Basin Aquifer Systems, Designated Area and Project Review Area

The basin aquifer systems underlie all of Warren County, NJ; and portions of Sussex, Passaic, Morris, Mercer, Hunterdon, Somerset and Middlesex Counties, NJ, and Orange County, NY. The aquifer systems are delineated by drainage basin divides, streams which serve as discharge points, and the northern boundary of the Coastal Plain Physiographic Province where it crosses the Millstone River Basin. The basin aquifer systems encompass approximately 1,735 square miles.

The Delawanna Creek Basin Aquifer System underlies a portion of Warren County. The area includes parts of the Townships of Blairstown, Knowlton, Hope, and White, and the Town of Belvidere.

The Flat Brook Basin Aquifer System underlies portions of Sussex and Warren Counties. The area includes parts of the Townships of Wantage, Montague, Sandyston, Frankford, Stillwater, and Walpack.

The Lopatcong Basin Aquifer System underlies a portion of Warren County. The area includes parts of the Townships of Greenwich, Harmony, Lopatcong, Oxford, Pohatcong, and White, the Borough of Alpha, and the Towns of Belvidere and Phillipsburg.

The Millstone River Basin Aquifer System underlies portions of Morris, Sussex, Warren, and Hunterdon Counties. The area includes all of Princeton Township and Hopewell, Princeton, Millstone, and Rocky Hill Boroughs; and parts of the Townships of Bridgewater, East Amwell, Franklin, Hillsborough, Hopewell, Lawrence, Montgomery, North Brunswick, Plainsboro, South Brunswick, West Amwell, and West Windsor, and the Boroughs of Manville and Pennington.

The Musconetcong River Basin Aquifer System underlies portions of Morris, Sussex, Warren, and Hunterdon Counties. The area includes all of Bloomsbury, Stanhope, and Hopat-cong Boroughs and the Town of Hackettstown; and parts of the Townships of Alexandria, Allamuchy, Bethlehem, Byram, Franklin, Green, Greenwich, Holland, Independence, Jefferson, Lebanon, Mansfield, Mount Olive, Pohatcong, Roxbury, Sparta, and Washington, the Boroughs of Glen Gardner, Hampton, Mount Arlington, Netcong, and Washington.

The North Branch Raritan River Basin Aquifer System underlines portions of Hunterdon, Morris and Somerset Counties. The area includes all of Bedminster Township and Chester, Lebanon and Peapack-Gladstone Boroughs; and parts of the Townships of Bernards, Branchburg, Bridgewater, Chester, Clinton, Hillsborough, Lebanon Mendham, Mine Hill Randolph, Readington, Roxbury, Tewksbury, and Washington, the Boroughs of Bernardsville, Califon, Far Hills, Mendham, Mount Arlington, Raritan, and Somerville, and the Town of Clinton.

The Papakating Creek Basin Aquifer System underlies a portion of Sussex County. The area includes parts of the Township of Frankford, Lefayette, Montague, Sandyston, and Wantage, and the Borough of Sussex.

The Paulins Kill Basin Aquifer System underlies portions of Warren and Sussex Counties. The area includes all of Hampton Township and Branchville Borough; and parts of the Townships of Andover, Blairstown, Frankford, Fredon, Frelinghuysen, Hardwick, Hardyston, Knowlton, Lafayette, Pahaquarry, Sandyston, Sparta, Stillwater, and Walpack, and the Town of Newton.

The Pequest River Basin Aquifer System underlies portions of Warren and Sussex Counties. The area includes all of Liberty Township and Andover Borough; and parts of the Townships of Allamuchy, Andover, Blairstown, Byram, Fredon, Frelinghuysen, Green, Hope, Independence, Knowlton, Mansfield, Oxford, Sparta Washington, and White, and Towns of Belvidere and Newton.

The Pochuck Creek Basin Aquifer System underlies portions of Sussex and Passaic Counties, NJ, and Orange County, NY. The area includes all of the Village of Warwick, NY; and parts of the Townships of Hardyston, Vernon, and West Milford, NJ and the Townships of Warwick and Chester, NY.

The Pohatcong Creek Basin Aquifer System underlies a portion of Warren County. The area includes all of Washington Borough; and parts of the Townships of Franklin, Greenwich, Harmony, Independence, Lopatcong, Mansfield, Oxford, Pohatcong, Washington, and White, and the Borough of Alpha.

The South Branch Raritan River Basin Aquifer System underlies portions of Warren, Hunterdon and Somerset Counties. The area includes all of Flemington and High Bridge Boroughs; and parts of the Township of Alexandria, Bethlehem, Branchburg, Chester, Clinton, Delaware, East Amwell, Franklin, Hillsborough, Lebanon, Mount Olive, Raritan, Readington, Roxbury, Tewksbury, Union, Washington, and West Amwell, the Town of Clinton, and the Boroughs of Califon, Glen Gardner, Hampton, and Mount Arlington.

The Shimmers Brook Basin Aquifer System underlies portions of Sussex County, NJ and Orange County, NY. The area includes parts of the Townships of Montague, Sandyston, Walpack, and Wantage, NJ, and the Township of Greenville and the City of Port Jervis, NY.

The Van Campens Brook Basin Aquifer System underlies portions of Warren and Sussex Counties. The area includes parts of the Township of Blairstown, Hardwick, Knowlton, Pahaquarry and Walpack.

The Wallkill River Basin Aquifer System underlies portions of Sussex County, NJ and Orange County, NY. The area includes all of the Village of Unionville, NY; and parts of the Townships of Andover, Byram, Hardyston, Jefferson, Lafayette, Montague, Sparta, Vernon, and Wantage, and the Boroughs of Franklin, Hamburg, Ogdensburg, and Sussex, NJ, and the Townships of Greenville, Minisink, Warwick, Wawayanda, Mount Hope, and Wallkill, NY.

The aquifer service areas for the Lopatcong Creek, Millstone River, Musconetcong River, North Branch Raritan River, Papakating Creek, Pequest River, Pohatcong Creek, South Branch Raritan River, Shimmers Brook, and the Wallkill River Basin Aquifer Systems extend beyond their aquifer system boundaries. Ground water from these basin aquifer systems is used by purveyors to supply people outside the aquifer system boundary. The population of all 15 aquifer service areas combined is approximately 600,000 people.

The recharge area for the 15 basin aquifer systems is the entire designated area. The streamflow source zone is defined as the upstream area of losing streams which flow into the recharge area. Except for the Millstone River, no streams flow into the recharge areas. In addition, all measurements indicate streams in the designated area are gaining streams. Therefore, there are no streamflow source zones for any of the 15 basin aquifer systems.

Only contaminants introduced in the recharge areas have the potential to affect the basin aquifer systems.

Therefore, the project review area is defined to include the entire designated area for the 15 basin aquifer systems.

Maps delineating the designated area and lists of the municipalities within each basin aquifer system are available, and may be obtained by contacting the person listed previously.

IV. Information Utilized in Determination

The information utilized in this determination included petition and background documentation submitted by the NJDEP, various U.S. Geological Survey and New Jersey State reports submitted with the petition, information contained in EPA files, and written and verbal comments from the public. These materials are available to the public and may be inspected during normal business hours at the address listed previously.

V. Project Review

Publication of this determination requires that EPA review proposed projects with Federal financial assistance in order to ensure that such projects do not have the potential to contaminate the 15 basin aquifer systems through their recharge zones so as to create a significant hazard to public health. In many cases, these projects may also be analyzed in an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA), 42 U.S.C. 4332(2)(c). All EISs, as well as any other proposed Federal actions affecting an EPA program, are required by Federal law (under the so-called "NEPA/309" process) to be reviewed and commented upon by the EPA Administrator.

In order to streamline EPA review of the possible environmental impacts on a designated sole source aquifer, when an action is to be analyzed in an EIS, the two reviews will be consolidated and both authorities cited. The EPA review under §1424(e) will therefore be included in the EPA review of the EIS (under NEPA).

VI. Summary and Discussion of Public Comments

Most public comments received expressed strong support for the designation of the 16 basin aquifer systems for which NJDEP developed the necessary documentation. Of the eleven persons or groups who submitted comments on the petition, only the New York State Department of Environmental Conservation (NYSDEC) opposed designation. NYSDEC's comments were specific to the portions of the basin aquifer systems which extend into NY. The reasons given for opposition are that (1) the basin aquifer systems which extend into NY are not listed as Primary Water Supply Aquifers by the State, and that designating such areas as a SSA distorts the State priority system; and (2) ground water flow in the Wallkill River Basin Aquifer System is north, from NJ into NY, and that any activities within the Wallkill River Basin in NY will have no impact on ground water quality in NJ.

In response to the above, (1) the Federal SSA program, as administered by EPA, is based on criteria independent of any State ground water program; and (2) it is Agency policy to, whenever possible, designate SSAs based on hydrogeologic rather than political boundaries because contamination of any portion of an aquifer can affect the downgradient portions of that aquifer. All information reviewed indicates that the ground water divide in this area will correspond with the drainage basin divide. For this reason, the first prominent divide in the NY portion of the Wallkill River Drainage Basin was used to define the northern boundary of the Wallkill River Basin Aquifer System.

One person expressed concern that the Whippany River Basin Aquifer System portion of the petition area overlaps the peviously designated Buried Valley Sole Source Aquifer. Review of designation documentation by Agency personnel confirmed that an overlap exists between the two areas. Therefore, the area recommended for designation does not include the Whippany River Basin Aquifer System.

Another person expressed concern that SSA designation may impede local solid waste management efforts. However, SSA designation provides for review of ground water protection measures for only those projects which request Federal financial assistance. Since solid waste management at the local level is not federally funded, such efforts will not be subject to review under the SSA program.

Another commentor requested that EPA expand the proposed designated area for the Wallkill River Basin Aquifer System in Orange County, New York. Insufficient information was submitted with their request to justify an expansion. Therefore, rather than delay designation of an area with sufficient documentation, EPA will proceed with designation of the area as petitioned.

VII. Summary

Today's action affects the 15 basin aquifer systems of northwest NJ, located in Warren, Sussex, Passaic, Morris, Mercer, Hunterdon, Somerset and Middlesex Counties, NJ, and Orange County, NY. Projects with Federal financial assistance proposed for all of Warren County, NJ; and portions of Sussex, Passaic, Morris, Mercer, Hunterdon, Somerset and Middlesex Counties, NJ, and Orange County, NY, will be reviewed to ensure that necessary ground water protection measures are incorporated into them.

Dated: June 10, 1988.

Christopher J. Daggett,

Regional Administrator, Environmental Protection Agency, Region II.

[FR Doc. 88-14155 Filed 6-22-88; 8:45 am]

BILLING CODE 6560-50-M

FEDERAL COMMUNICATIONS COMMISSION

Applications for Consolidated Hearing; Ebenezer Broadcasting Group, Inc., et al.

1. The Commission has before it the following mutually exclusive applications for a new TV station:

Applicant, city and state	File No.	MM Docket No.
A. Ebenezer Broadcasting Group, Inc., Guayama, PR.	BPCT-870331OI	88-291
B. Ministerio Radial Cristo Viene, Inc., Guayama, PR.	BPET-870505KG	

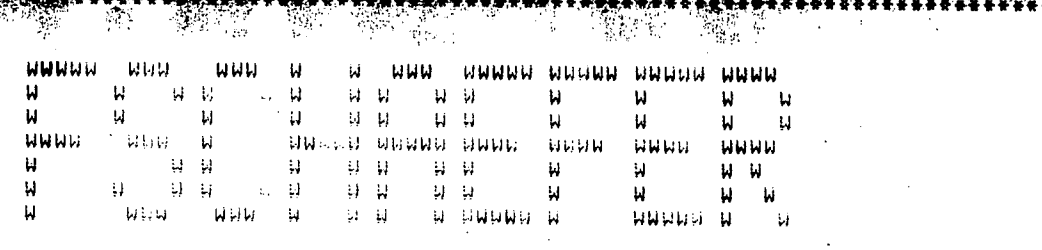
2. Pursuant to section 309(e) of the Communications Act of 1934, as amended, the above applications have been designated for hearing in a consolidated proceeding upon the issues whose headings are set forth below. The text of each of these issues has been standardized and is set forth in its entirety under the corresponding headings at 51 FR 19347, May 29, 1986. The letter shown before each applicants' name, above, is used below to signify whether the issue in question applies to that particular applicant.

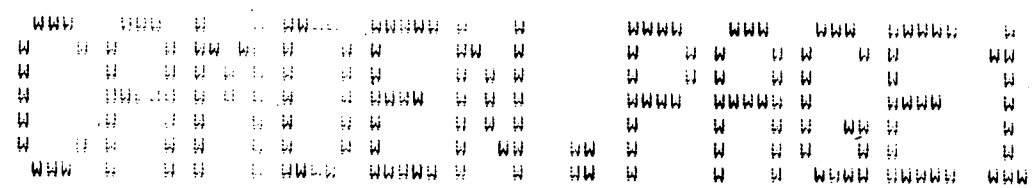
Issue Heading and Applicant(s)

Short-spacing, A, B
Contingent environmental, A, B
Comparative, A, B
Ultimate, A, B
(See appendix)

3. If there is any non-standardized issue(s) in this proceeding, the full text of the issue and the applicant(s) to which it applies are set forth in an Appendix to this notice. A copy of the complete HDO in this proceeding is available for inspection and copying during normal business hours in the FCC Dockets Branch (Room 230), 1919 M

REFERENCE NO. 8





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U.S. GEOLOGICAL SURVEY TRENTON, NEW JERSEY

PI NO	SITE ID	LATITU	LONGTU	MUNICIPALITY	SITE OWNER	LOCAL IDENTIFIER	DATE COMPLETED	USE OF SITE	ORIG WATER USE	CURR WATER USE	LAT LON ACC
070044	395508075070201	395508	750702	CAMDEN CITY	CURLEY CO INC	1	/ /	W	N	N	F
070045	395508075070202	395508	750702	CAMDEN CITY	CURLEY CO INC	2	/ /	W	N	N	F
070046	395512075064001	395512	750640	CAMDEN CITY	CAMDEN CITY W D	CITY 11	01/01/1942	W	P	P	S
070047	395523075072901	395524	750729	CAMDEN CITY	CAMDEN SEWAGE A	SEWAGE PLANT 1	01/11/1954	U	U	U	S
070048	395527075064601	395527	750646	CAMDEN CITY	CAMDEN CITY W D	CITY 6N	01/20/1948	W	P	U	F
070049	395527075064602	395527	750646	CAMDEN CITY	CAMDEN CITY W D	CITY 6-1928	09/10/1928	Z	P	U	S
070050	395528075053801	395528	750538	CAMDEN CITY	STOLLWRECK, A N	2-1950	02/17/1950	W	N	N	S
070051	395530075071901	395530	750719	CAMDEN CITY	GALLAGHERS WHSE	EVRSN LVRNG 5	01/01/1929	W	N	N	F
070052	395530075071902	395530	750719	CAMDEN CITY	GALLAGHERS WHSE	EVRSN LVRNG 4	/ /	W	N	N	F
070053	395532075071901	395532	750719	CAMDEN CITY	GALLAGHERS WHSE	EVRSN LVRNG 6	/ /	W	N	N	F
070054	395532075072001	395532	750720	CAMDEN CITY	GALLAGHERS WHSE	EVRSN LVRNG 2	01/01/1933	W	N	N	F
070055	395534075072401	395534	750724	CAMDEN CITY	GALLAGHERS WHSE	EVRSN LVRNG 1	01/01/1929	W	N	N	F
070056	395534075072402	395534	750724	CAMDEN CITY	GALLAGHERS WHSE	EVRSN LVRNG 3	/ /	W	N	N	F
070057	395539075054101	395539	750541	CAMDEN CITY	OUR LADY HOSP	STAND BY WELL	09/18/1963	W	M	M	S
070058	395539075063001	395539	750630	CAMDEN CITY	W JERSEY HOSP	W JERSEY HOSP1	12/08/1958	W	T	T	S
070059	395540075074201	395540	750742	CAMDEN CITY	CAMDEN CITY W D	CITY 8	01/01/1928	Z	P	U	S
070060	395540075074202	395540	750742	CAMDEN CITY	CAMDEN CITY W D	CITY 8A	07/29/1953	Z	P	U	F
070061	395541075062201	395541	750622	CAMDEN CITY	CAMDEN CITY W D	CITY 4	01/01/1950	W	P	U	F
070062	395541075062202	395541	750622	CAMDEN CITY	CAMDEN CITY W D	CITY 4-1935	08/14/1935	W	P	U	S
070063	395541075062203	395541	750622	CAMDEN CITY	CAMDEN CITY W D	CITY 4-1922	01/01/1922	W	P	U	S
070064	395546075053301	395546	750533	CAMDEN CITY	CAMDEN CITY W D	CITY 17	05/13/1954	W	P	P	F
070065	395550075072901	395550	750729	CAMDEN CITY	CAMDEN CITY W D	CITY 2B	11/02/1953	Z	P	U	S
070066	395550075072902	395550	750729	CAMDEN CITY	CAMDEN CITY W D	CITY 2A	08/05/1927	Z	P	U	S
070067	395551075072501	395551	750725	CAMDEN CITY	PUBLIC SERV E-G	PSEGC 14	01/01/1950	W	N	N	S
070068	395552075053501	395552	750535	CAMDEN CITY	CAMDEN CITY W D	CITY 13	06/19/1953	W	P	P	F
070069	395554075074701	395554	750747	CAMDEN CITY	FLINTKOTE CORP	14-COKE PLANT	05/27/1950	Z	N	U	F
070070	395557075062901	395557	750629	CAMDEN CITY	CAMDEN CITY W D	CITY 3A	12/31/1953	Z	P	U	S
070071	395557075062902	395557	750629	CAMDEN CITY	CAMDEN CITY W D	CITY 3-1934	01/01/1934	W	P	U	S
070072	395557075062903	395557	750629	CAMDEN CITY	CAMDEN CITY W D	CITY 3-1922	04/24/1922	W	P	U	S
070073	395602075074401	395602	750744	CAMDEN CITY	FLINTKOTE CORP	PSEGC 7	01/01/1947	Z	N	U	F
070074	395603075073601	395603	750736	CAMDEN CITY	PUBLIC SERV E-G	PSEGC 8	01/01/1955	W	N	N	F
070075	395604075073501	395604	750735	CAMDEN CITY	FLINTKOTE CORP	6 REPLACEMENT	01/01/1954	Z	N	U	F
070076	395614075063301	395616	750632	CAMDEN CITY	CAMDEN CITY W D	CITY 5-1928	05/04/1928	W	P	U	F
070077	395614075063302	395616	750632	CAMDEN CITY	CAMDEN CITY W D	CITY 5-1937	01/01/1937	W	P	U	F
070078	395615075063301	395616	750632	CAMDEN CITY	CAMDEN CITY W D	CITY 5N	10/24/1963	W	P	P	F
070079	395617075071001	395617	750710	CAMDEN CITY	CAMDEN CITY W D	CITY 12	01/01/1945	W	P	P	S
070080	395630075060101	395630	750601	CAMDEN CITY	HOLLINGSHEAD, R	1-1928	01/01/1928	W	N	N	S
070081	395637075060301	395637	750603	CAMDEN CITY	PARIS PRODUCE C	REPLACEMENT	03/06/1964	W	N	N	F
070082	395637075063301	395637	750633	CAMDEN CITY	BALTIMORE MKTS	CAMDEN 2	12/05/1950				M
070083	395638075062201	395638	750622	CAMDEN CITY	CAMDEN CITY W D	CITY 1A	12/17/1953	W	P	U	F
070084	395638075062202	395638	750622	CAMDEN CITY	CAMDEN CITY W D	CITY 1-1922	01/01/1922	W	P	U	
070085	395638075071101	395638	750711	CAMDEN CITY	STANLEY CORP AM	STANLEY THEATR	06/23/1949				F
070086	395639075070401	395639	750704	CAMDEN CITY	SAVAR AMUSEMENT	SAVAR THEATRE	03/13/1950				F

SELECTED INFORMATION OF WELLS IN THE GROUND WATER SITE INVENTORY DATABASE
CAMDEN COUNTY

USGS UNIQUE ID	ALTITUD	METH ALT MEAS	ALTI-TUDE ACC	WATER LEVEL	DATE LEVEL MEASURED	PRODU-TION LEVEL	DISCHARG	DEPTH FIRST OPENING	BOTTOM LAST OPENING	MIN OPEN DIA	OPEN-ING LENGT	TYPE OPEN -ING	TYPE OPEN MAT	BEDROCK DEPTH	BEDROCK MATERIAL	DEPTH DRILLER LOG
070044	0.00		0.00	0.00	/ /	0.00	0.00	0.00	0.00	0.0	0.0			0.00		0.00
070045	0.00		0.00	0.00	/ /	0.00	0.00	0.00	0.00	0.0	0.0			0.00		0.00
070046	13.00	M	10.00	32.00	09/01/1942	62.00	1005.00	124.00	154.00	16.0	30.0	S		0.00	SAND	0.00
070047	9.00	L	0.10	36.00	01/11/1954	71.00	907.00	163.00	193.00	10.0	30.0	S		0.00		0.00
070048	14.00	M	10.00	39.00	02/13/1948	70.00	1012.00	111.00	135.00	26.0	24.0	S		0.00	SAND	0.00
070049	14.00	M	20.00	18.00	09/19/1968	65.00	1180.00	0.00	0.00	0.0	0.0			0.00		0.00
070050	28.00	M	10.00	52.00	02/1 /1950	60.00	210.00	111.00	131.00	8.0	20.0	S		0.00	SAND	0.00
070051	10.00	M	20.00	0.00	/ /	0.00	0.00	0.00	0.00	0.0	0.0			0.00		0.00
070052	10.00	M	20.00	0.00	/ /	0.00	0.00	0.00	0.00	0.0	0.0			0.00		0.00
070053	10.00	M	20.00	0.00	/ /	0.00	0.00	0.00	0.00	0.0	0.0			0.00		0.00
070054	10.00	M	20.00	0.00	/ /	0.00	300.00	145.00	171.00	8.0	26.0	S		0.00		0.00
070055	10.00	M	20.00	0.00	/ /	0.00	150.00	0.00	0.00	0.0	0.0			0.00		0.00
070056	10.00	M	20.00	0.00	/ /	0.00	0.00	0.00	0.00	0.0	0.0			0.00		0.00
070057	30.00		0.00	48.00	09/19/1963	79.00	275.00	237.00	258.00	8.0	21.0	S		0.00		0.00
070058	30.00	M	10.00	52.00	12/09/1958	110.00	205.00	119.00	140.00	8.0	21.0	S		0.00		0.00
070059	6.00	M	10.00	21.00	09/01/1928	73.00	1085.00	0.00	0.00	0.0	0.0			0.00	SAND	0.00
070060	6.00	M	10.00	12.00	07/29/1953	42.00	1000.00	0.00	0.00	0.0	0.0			0.00	SAND	0.00
070061	41.00	M	10.00	77.00	11/01/1957	104.00	1000.00	131.00	156.00	18.0	25.0	S		0.00	SAND	0.00
070062	40.00	M	20.00	56.00	08/14/1935	90.00	1200.00	125.00	156.00	18.0	31.0	S		0.00		0.00
070063	40.00	M	20.00	0.00	/ /	0.00	0.00	0.00	0.00	0.0	0.0			0.00		0.00
070064	34.00	M	10.00	64.00	05/13/1954	96.00	1250.00	230.00	265.00	18.0	35.0	S		0.00	SAND	0.00
070065	8.00	M	10.00	41.00	11/02/1953	87.00	1000.00	111.00	132.00	18.0	21.0	S		0.00	SAND	0.00
070066	8.00	M	10.00	21.00	08/05/1927	63.00	1241.00	0.00	0.00	0.0	0.0			0.00		0.00
070067	5.00	M	10.00	31.00	05/01/1950	65.00	506.00	120.00	146.00	10.0	26.0	S		0.00	SAND	0.00
070068	30.00	M	10.00	46.00	06/19/1953	70.00	1000.00	185.00	225.00	18.0	40.0	S		0.00	SAND	0.00
070069	5.00	M	20.00	30.00	05/27/1950	64.00	500.00	120.00	146.00	10.0	26.0	S		0.00		0.00
070070	15.00	M	10.00	37.00	12/31/1953	83.00	1000.00	90.00	115.00	18.0	25.0	S		0.00	SAND	0.00
070071	15.00	M	10.00	0.00	/ /	0.00	0.00	0.00	0.00	0.0	0.0			0.00		0.00
070072	15.00	M	10.00	15.00	08/16/1922	70.00	1160.00	0.00	0.00	0.0	0.0			0.00		0.00
070073	4.00	M	10.00	0.00	/ /	0.00	0.00	120.00	142.00	10.0	22.0	S		0.00		0.00
070074	4.00	M	10.00	0.00	/ /	0.00	0.00	126.00	149.00	8.0	23.0	S		0.00		0.00
070075	5.00	M	10.00	35.00	12/01/1954	60.00	350.00	118.00	145.00	6.0	27.0	S		0.00	SAND	0.00
070076	22.00		0.00	31.00	05/04/1928	68.00	1100.00	152.00	171.00	12.0	19.0	S		0.00		0.00
070077	22.00		0.00	0.00	/ /	0.00	0.00	0.00	0.00	0.0	0.0			0.00		0.00
070078	22.00	M	10.00	58.00	10/24/1963	90.00	1000.00	134.00	169.00	18.0	35.0	S		0.00	SAND	0.00
070079	23.00	M	10.00	32.00	01/01/1945	106.00	857.00	136.00	166.00	16.0	30.0	S		0.00	SAND	0.00
070080	15.00	M	5.00	0.00	/ /	0.00	235.00	0.00	0.00	0.0	0.0			0.00		0.00
070081	0.00		0.00	45.00	03/06/1964	0.00	100.00	154.00	166.00	6.0	12.0	S		0.00		0.00
070082	16.00		0.00	50.00	12/05/1950	100.00	1200.00	138.00	170.00	10.0	32.0	S		0.00		0.00
070083	10.00	M	10.00	42.00	12/17/1953	96.00	1000.00	135.00	170.00	18.0	35.0	S		0.00	SAND	0.00
070084	5.00		0.00	12.00	10/01/1922	79.00	1050.00	0.00	0.00	0.0	0.0			0.00		0.00
070085	0.00		0.00	53.00	06/23/1949	0.00	200.00	116.00	138.00	10.0	22.0	S		0.00		0.00
070086	20.00		0.00	50.00	03/13/1950	80.00	500.00	82.00	113.00	10.0	31.0	S		0.00		0.00

USGS UNIQUE ID	WELL DEPTH	AQUIFER CODE	DATA RELIA-BILITY	HYDRO-LOGIC UNIT	DRILLER	CASING DIA	CASING TYPE	PERMIT NUMBER	GRID NUMBER	WATER ALLOC NUMBE	PLAN INDUS USE	LIFT TYPE	TIME PERIOD PUMPED	SPECIFIC CAPACITY	ALTITUDE WATER LEVEL	ALTITUDE CD
070044	0.00	211MRPA	U	02040202		0.0	W						0.0	0.00	0.00	8
070045	0.00	211MRPA	U	02040202		0.0	W						0.0	0.00	0.00	8
070046	154.00	211MRPA	C	02040202	Layne NY Co	16.0	W		3101953	00576	4941		8.0	33.50	-19.00	8
070047	193.00	211MRPA	C	02040202	Layne NY Co	10.0	W					T	0.0	25.91	-27.00	8
070048	135.00	211MRPA	C	02040202	Layne NY Co	26.0	W	3100013	3101929	A3113	4941		8.0	32.65	-25.00	8
070049	135.00	211MRPA	C	02040202	Layne NY Co	0.0	W				4941		0.0	25.11	-4.00	8
070050	131.00	211MRPA	C	02040202	Layne NY Co	8.0	W	3100111	3102718				3.0	26.25	-24.00	8
070051	203.00	211MRPA	U	02040202		0.0	W						0.0	0.00	0.00	8
070052	0.00	211MRPA	U	02040202		0.0	W						0.0	0.00	0.00	8
070053	0.00	211MRPA	U	02040202		0.0	W						0.0	0.00	0.00	8
070054	171.00	211MRPA	U	02040202	Vassey, S	8.0	W					T	0.0	0.00	0.00	8
070055	170.00	211MRPA	U	02040202		0.0	W						0.0	0.00	0.00	8
070056	0.00	211MRPA	U	02040202		0.0	W						0.0	0.00	0.00	8
070057	258.00	211MRPA	C	02040202	Schultes, AC	8.0	W	3104620				T	4.0	25.00	-38.00	8
070058	140.00	211MRPA	C	02040202	Schultes, AC	8.0	W	3103689		00143		T	8.0	3.53	-22.00	8
070059	175.00	211MRPA	C	02040202	Layne NY Co	0.0	W				4941		0.0	20.87	-15.00	8
070060	124.00	211MRPA	U	02040202	Layne NY Co	0.0	W	3100944	3102252	00576	4941		8.0	33.33	-6.00	8
070061	156.00	211MRPA	C	02040202	Layne NY Co	0.0	W				4941		0.0	37.04	-36.00	8
070062	156.00	211MRPA	C	02040202	Layne NY Co	18.0	W		3101935		4941		0.0	35.29	-16.00	8
070063	0.00	211MRPA	C	02040202		0.0	W				4941		0.0	0.00	0.00	8
070064	265.00	211MRPA	C	02040202	Layne NY Co	18.0	W	3101250	3102715	00786	4941		8.0	39.06	-30.00	8
070065	132.00	211MRPA	C	02040202	Layne NY Co	18.0	W	3100941	3101913	00253	4941		8.0	21.74	-33.00	8
070066	182.00	211MRPA	U	02040202	Layne NY Co	0.0	W		3101913		4941	T	0.0	29.55	-13.00	8
070067	146.00	211MRPA	U	02040202	Artesian Co	10.0	W						12.0	14.88	-26.00	8
070068	225.00	211MRPA	C	02040202	Layne NY Co	18.0	W	3100904	3102712	00758	4941		0.0	41.67	-16.00	8
070069	146.00	211MRPA	C	02040202	Stephens, P	10.0	W	3100115		00028		T	12.0	14.71	-25.00	8
070070	115.00	211MRPA	C	02040202	Layne NY Co	18.0	W	3100942	3101931	00253	4941		8.0	21.74	-22.00	8
070071	113.00	211MRPA	U	02040202	Layne NY Co	0.0	W				4941	T	0.0	0.00	0.00	8
070072	110.00	211MRPA	U	02040202		0.0	W				4941		0.0	21.09	0.00	8
070073	142.00	211MRPA	U	02040202	Nicholas, AJ	10.0	W		3101911				0.0	0.00	0.00	8
070074	149.00	211MRPA	U	02040202	Nicholas, AJ	8.0	W						0.0	0.00	0.00	8
070075	145.00	211MRPA	U	02040202	Artesian Co	8.0	W	3101668	3101912	A3125			24.0	14.00	-30.00	8
070076	171.00	211MRPA	U	02040202	Layne NY Co	26.0	W		3101694		4941		0.0	29.73	-9.00	8
070077	172.00	211MRPA	U	02040202		0.0	W				4941		0.0	0.00	0.00	8
070078	169.00	211MRPA	C	02040202	Layne NY Co	18.0	W	3104699		00297	4941		0.0	31.25	-36.00	8
070079	166.00	211MRPA	C	02040202	Layne NY Co	16.0	W		3101684		4941		0.0	11.58	-9.00	8
070080	172.00	211MRPA	U	02040202		0.0	W						0.0	0.00	0.00	8
070081	166.00	211MRPA	U	02040202	Schultes, AC	6.0	W						0.0	0.00	-45.00	8
070082	170.00	211MRPA	U	02040202	Schultes, AC	10.0	W	3100161	3101691				6.0	24.00	-34.00	8
070083	170.00	211MRPA	C	02040202	Layne NY Co	18.0	W	3100940	3101692	00253	4941		8.0	18.52	-32.00	8
070084	174.00	211MRPA	U	02040202		0.0	W				4941		0.0	15.67	-7.00	8
070085	138.00	211MRPA	U	02040202	Schultes, AC	10.0	W						0.0	0.00	-53.00	8
070086	113.00	211MRPA	U	02040202	Schultes, AC	10.0	W						8.0	16.67	-30.00	8

United States Department of the Interior
GEOLOGICAL SURVEY
Water Resources Division
Mountain View Office Park
810 Bear Tavern Rd., Suite 206
W. Trenton, NJ 08628

February 21, 1986

Ms. Diane Trube
NUS Corporation
Raritan Plaza II
Fieldcrest Avenue
Edison, NJ 08837

Dear Ms. Trube:

Enclosed are retrievals from our Ground Water Site Inventory Data Base for 14 New Jersey counties as you requested. Together with the retrievals for seven (7) counties previously sent on January 14, 1986, this provides you with a complete copy of the data base for New Jersey with approximately 7,000 entries.

I trust that this information will be useful.

Sincerely,

F. L. Schaefer

F. L. Schaefer
Information Requests Specialist

Encl.

cc: T. V. Fusillo

FLS:nm

USGS - GWSI FILE

STORED COMPONENTS

Each of the components stored in the District File is described in this section. Most of the definitions are derived from Volume II of the WATSTORE User's Guide.

1. Unique Well Number - A six digit number of which the first two digits represent the county code and the last four digits are a consecutive number assigned to the well when the well is scheduled. The county codes and the counties they represent are:

COUNTY CODES

01 - ATLANTIC	23 - MIDDLESEX
03 - BERGEN	25 - MONMOUTH
05 - BURLINGTON	27 - MORRIS
07 - CAMDEN	29 - OCEAN
09 - CAPE MAY	31 - PASSAIC
11 - CUMBERLAND	33 - SALEM
13 - ESSEX	35 - SOMERSET
15 - GLOUCESTER	37 - SUSSEX
17 - HUDSON	39 - UNION
19 - HUNTERDON	41 - WARREN
21 - MERCER	

2. Site - ID - A 15-digit identification number assigned to the site used primarily as an internal control number within the WATSTORE computer file. Although the Site - ID is formed initially from the latitude and longitude of the site, the number is an identifier and not a locator.

3. Latitude - The best available value for the latitude of the site in degrees, minutes, and seconds.

Longitude - The best available value for the longitude of the site in degrees, minutes, and seconds.

5. Municipality - The name of the township in which the well is located.

6. Owner - The most current known owner of the well.

7. Local identifier - A name given to the well by the owner or U.S. Geological Survey to help distinguish between multiple wells of the same owner.

8. Date completed - The date the well was completed by the driller.

9. Use of site - A code indicating the principal use of the site. The codes and their meanings are:

A - anode
C - standby emergency supply
D - drain
E - geothermal
G - seismic
H - heat reservoir
M - mine
O - observation
P - oil or gas well
R - recharge
S - repressurize
T - test
U - unused
W - withdrawal of water
X - waste disposal
Z - destroyed

Use of water - A code indicating the principal use of water from the site. The codes and their meanings are:

A - air conditioning	I - irrigation	R - recreation
B - bottling	J - industrial (cooling)	S - stock
C - commercial	K - mining	T - institution
D - dewater	M - medicinal	U - unused
E - power	N - industrial	Y - desalination
F - fire	P - public supply	Z - other (explain
H - domestic	Q - aquaculture	in remarks)

11. Altitude of land surface (feet) - The altitudes of the land surface at the site, in feet above land surface datum (NVGD of 1929).

12. Water level (feet) - The depth of the water in the well from the land surface at the time the well was constructed.

13. Date water level measured - The date on which the given water level was measured which is usually at the time the well was constructed.

14. Depth of well (feet) - The depth of the finished well in feet below land surface datum. This is not always equal to the bottom of the last opening because the well may have a plug at the bottom.

15. Production level (feet) - The water level in feet below land surface while the well was discharging usually taken during the initial pump test.

6. Discharge - The discharge from the site in gallons per minute at the time of the original pump test.

7. Principal aquifer - A code representing the principal source of water in the well. The codes and their meanings are found in Appendix A.

18. Data reliability - Primarily indicates if the well has been field checked by the New Jersey District of the U.S. Geological Survey. The codes and their meanings are:

C - the data have been field checked by the reporting agency.

U - the data have not been field checked by the reporting agency, but the reporting agency considers the data reliable.

19. Altitude measurement method - A code indicating the method used to determine the altitude of the site. The codes and their meanings are:

A - altimeter

L - level or other surveying method

M - interpolated from topographic map

Failure to select one of these values implies that the method is unknown.

Length of screen (feet) - The calculated difference between the bottom and top of the open section.

21. Multiple opening flag - In the instances where there are multiple screens or blanks within the screened interval the value calculated is flagged by a *. Thus, the length of screen can be greater than the top to bottom if the screens are telescoped or less if there are blanks.

22. Depth to first opening (feet) - The depth to the top of the first open section of the screen or open hole in feet below land surface.

23. Bottom last opening (feet) - The depth to the bottom of the last open section of the screen or open hole in feet below land surface.

24. Minimum screen diameter (inches) - The smallest diameter of the open section that can be filled with water.

25. End depth drillers log (feet) - The deepest point below land surface that accompanies the drillers lithologic log of the well.

26. Hydrologic unit - A cataloging unit representing the hydrologic unit in which the site is located. The hydrologic units and their boundaries are given in the map provided.

Driller - The name of the company or individual that drilled and finished the well.

Minimum casing diameter (inches) - The diameter of the narrowest casing segment of the well.

Owner date - The most current date of ownership associated with the well.

Site type - A code representing the type of well. The codes and their meanings are:

C - collector or Ranney type well.

D - drain dug to intercept the water table or potentiometric surface to either lower the ground-water level or serve as a water supply.

E - excavation.

H - sinkhole.

I - interconnected wells, also called connector or drainage wells; that is, a well interconnected via an underground lateral.

M - multiple wells. Use only for well field consisting of a group of wells that are pumped through a single header and for which little or no data about the individual wells are available.

O - outcrop.

P - pond dug to intercept the water table or potentiometric surface and serve as a water supply.

S - spring (used only on spring schedule.

T - tunnel, shaft, or mine from which ground water is obtained.

W - well, for single wells other than wells of the collector or Ranney.

X - test hole, not completed as a well.

31. Latitude - longitude accuracy - Indicates the accuracy to which the lat-long is measured. When it is measured from a U.S. Geological Survey topographic map the code T for ± 10 seconds is generally used. When field checked the code used is F ± 5 seconds. The codes and meanings are:

S - the measurement is accurate to ± 1 second

F - the measurement is accurate to ± 5 seconds

T - the measurement is accurate to ± 10 seconds

M - the measurement is accurate to ± 1 minute

No value indicates that the accuracy is unknown and is, therefore, assumed to be beyond one minute.

32. Accuracy of altitude - The accuracy of altitudes interpolated from the contours on topographic maps is ± one-half the contour interval.

33. Current use of water - The codes from use of water are used, however, this code represents the current status of the well. The primary use may have changed or the well may have been destroyed.

34. Measuring point - point above land surface from which water level measurement is taken.

35. Permit number - The State Department of Environmental Protection, Division of Water Resources (NJDEP/DWR) assigns a 6-7 digit code with the first 2 digits representing the State Atlas Map on which the well is located and the remaining 4-5 digits are assigned consecutively.

36. Grid number - The 7 digit code assigned by the NJDEP/DWR representing the well location on the State Atlas Maps.

37. Water Supply number - Number assigned by the NJDEP/DWR Water Policy and Supply Council, to the diversion rights of a well.

38. Depth to bedrock - Depth in feet below land surface datum where a rock formation is first encountered.

39. Bedrock material (lithology) - The description and classification of bedrock. The codes and their meanings are given in Appendix C.

40. Standard industrial use code - A standard four-digit code representing the use of the water. The codes and their meanings are given in Appendix B.

Type of opening - The code indicating type of open section. The codes and their meanings are:

F - fractured rock

L - louvered or shutter-type

M - mesh screen

P - perforated, porous, or slotted casing

R - wire-wound screen

S - screen, type not known

T - sand point

W - walled or shored

X - open hole

Z - other (explain in remarks)

This field is mandatory. Information about the openings will not be stored if this field is blank.

42. Type of opening material (C86/Screen-Material) - The code indicating the type of material from which the screen or other open section is made. The codes and their meanings are:

B - brass or bronze

C - concrete

G - galvanized iron

I - wrought iron

M - other metal

P - PVC, fiberglass, or other plastic

R - stainless steel

S - steel

T - tile

Z - other (explain in remarks)

43. Type of lift - The type of lift or pump used to bring water to the surface. The codes and meanings are:

A - air list

B - bucket

C - centrifugal pump

J - jet pump

P - piston pump

R - rotary pump

S - submergible pump

T - turbine pump

U - unknown

Z - other (explain in remarks)

14. Municipolity code - A list of municipalities and codes published by the New Jersey Department of Transportation. The code are assigned 2-digit numbers to the alphabetical listing of municipolities within each county. (Appendix D.)

Values stored in the GWSIDB.DAT file can be used to compute other components using DATATRIEVE. These components do not occupy space in the GWSIDB.DAT file and are derived only when you use them in a DATATRIEVE statement.

1. Altitude of water level (feet) - A value calculated by the computer by subtracting the water level from the altitude of the land surface.

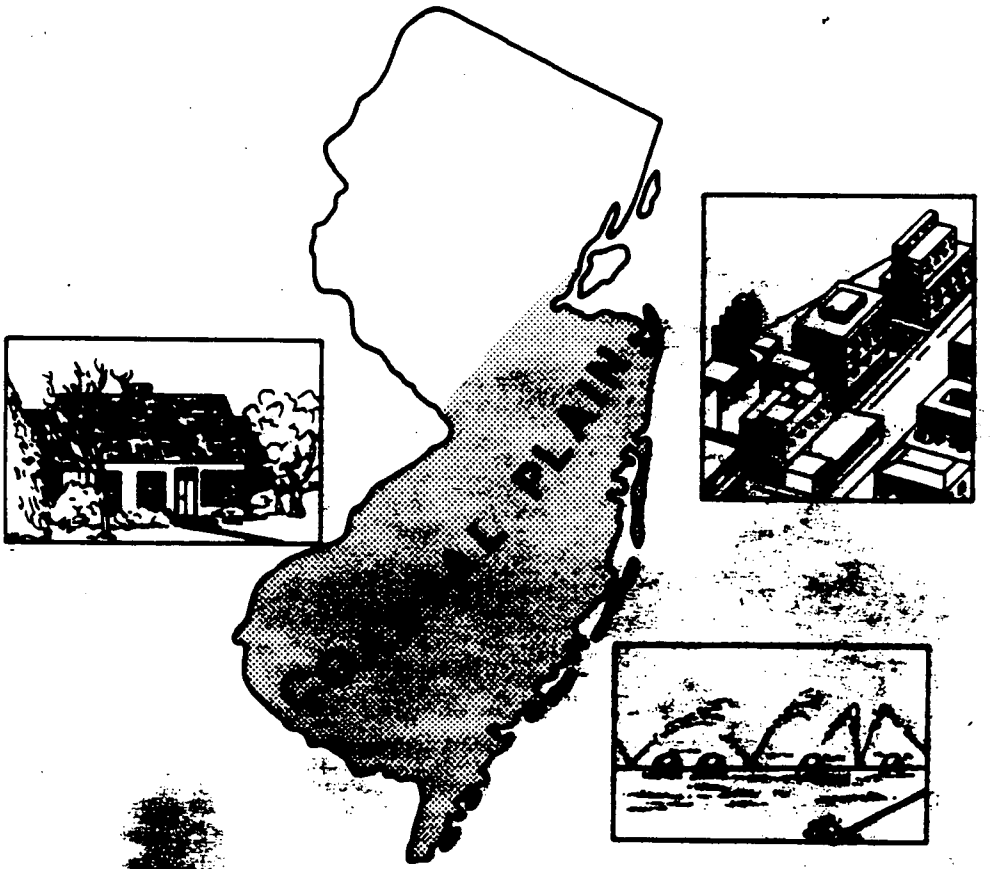
2. Drawdown (feet) - The difference between the production level and the water level.

3. Specific capacity - The discharge expressed as a rate of yield per unit drawdown reported in units of gallons per minute per feet. If the value is followed by a μ, the date of the water level measurement is different than the date of construction by two years or greater or one of the dates is blank. This gives an indication of the reliability of the specific capacity measurement to the initial conditions at the time the well was drilled.

REFERENCE NO. 9

WATER LEVELS IN MAJOR ARTESIAN AQUIFERS OF THE NEW JERSEY COASTAL PLAIN, 1983

U.S. GEOLOGICAL SURVEY
Water-Resources Investigations Report 86-4028



Prepared in cooperation with the
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION, DIVISION OF WATER RESOURCES

WATER LEVELS IN MAJOR ARTESIAN AQUIFERS OF THE NEW JERSEY COASTAL PLAIN, 1983

By James A. Eckel and Richard L. Walker

U.S. GEOLOGICAL SURVEY

Water-Resources Investigations Report 86-4028

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NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION,

DIVISION OF WATER RESOURCES

Trenton, New Jersey
1986

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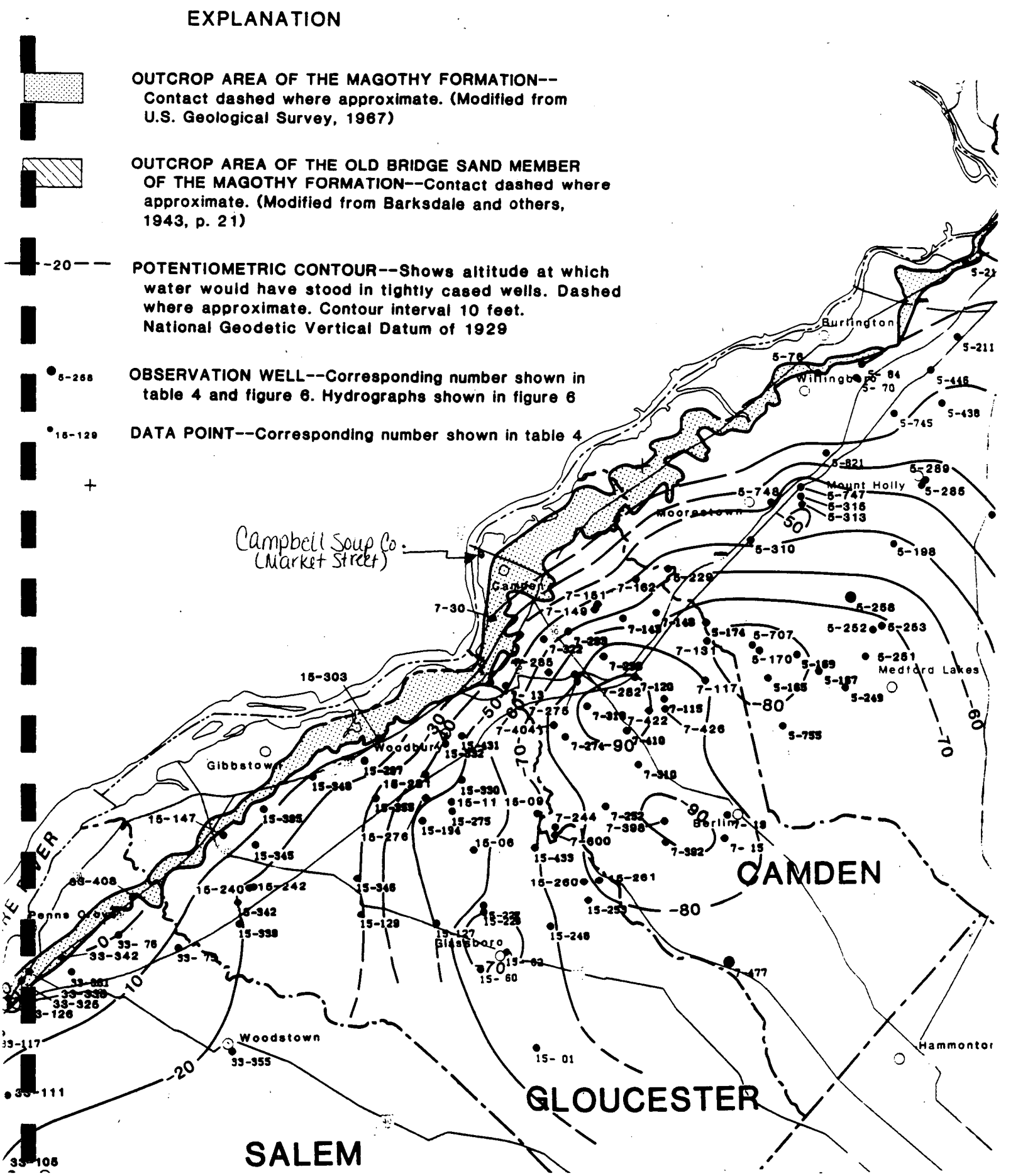


POTENTIOMETRIC SURFACE OF THE UPPER AQUIFER OF THE POTOMAC-RARITAN-MAGOTHY AQUIFER SYSTEM, 1983

Table 4.--Water-level data for wells screened in the upper aquifer of the Potomac-Raritan-Magothy aquifer system.

Well number	Location: Lati-tude	Location: Longi-tude	Owner	Local number	Year drilled	Altitude of land surface[1] (ft)	Screen interval[1] (ft)	Water level: 1978: Alti-tude[1] (ft)	1978: Date (mo/day)	Water level: 1983: Alti-tude[1] (ft)	1983: Date (mo/day)	Change in water level (1978-83) (ft)
5- 70	400313	745004	BURLINGTON T WD	TEST 1	1970	60	140- 200	-13	11/14	-11	11/01	2
5- 76	400324	745152	HEAL,CHARLES JR	HEAL	1955	50	59- 80	-3	11/07	-4	10/31	-1
5- 84	400342	744948	MASONIC HOME	MASONIC 1	1921	60[e]	178- 194	-11	11/12	-10	11/01	1
5-116	400708	743836	CHESTRFD SCHOOL	1	1957	102	247- 253	7	10/24	6	10/27	-1
5-160	400315	745408	NJ WATER CO	DVWC 22	1963	45	102- 123	15	11/15	17	10/26	2
5-165	395233	745418	EVESHAM M U A	EMUA 4	1970	110	464- 500	-75	11/14	-81	11/07	-6
5-167	395247	745157	EVESHAM M U A	EMUA 5	1973	50	458- 555[e]	-70	11/14	-79	11/07	-9
5-169	395322	745300	EVESHAM M U A	TEST 12-1972	1972	50	455- 475	-69	11/14	-83	11/07	-14
5-170	395333	745440	EVESHAM M U A	EMUA 1	1956	89	369- 389	-68	11/14	-81	11/07	-13
5-174	395432	745709	EVESHAM M U A	EMUA 3	1967	60	291- 331	-69	11/08	-78	11/07	-9
5-198	395720	744822	MOUNT HOLLY W C	LLWS 2	1960	70	336- 356	-45	11/14	-53	11/01	-8
5-207	400356	744039	VAN MATER, CHAS	CRESANT FARMS		95	325[1]	-13	10/31	-16	10/28	-3
5-211	400438	744519	O'BOYLE TRUCKIN	S J GROVE 1	1970	80	220[1]	-5	11/07	-5	10/27	0
5-212	400515	744109	N BURL CO HIGH	1	1959	83	290- 310	-13	11/02	-15	11/10	-2
5-218	400718	744453	RIVER FRT MOTEL	MOTEL		60	100[1]	-2	10/26	-4	10/26	-2
5-229	395630	745855	MAPLE SHADE W D	MSWD 9	1975	40	160- 200	-47	11/09	-57	11/03	-10
5-249	395209	745043	MEDFORD TWP WD	MTWD 3	1968	55	523- 541	-65	11/02	-75	11/03	-10
5-251	395316	744946	MEDFORD W C	MWC 4(1968)	1968	49	506- 536	-57	11/20	-71	11/02	-14
5-252	395413	744922	MEDFORD W C	MWC 1(3)	1957	48	506- 536	-63[e]	11/20	-73	11/02	-10
5-253	395422	744858	MEDFORD LEAS	1-1972	1972	32	447- 471	-58	11/20	-72	11/02	-14
5-258	395524	745025	US GEOL SURVEY	MEDFORD 1	1963	71	400- 410	-52	11/06	-65	01/09[e]	-13
5-285	395924	744702	MOUNT HOLLY W C	MHWC 4	1964	16	307- 342	-40	11/14	-37	11/01	3
5-289	395935	744651	MOUNT HOLLY W C	MHWC 3	1953	19	316- 346	-34	11/14	-34	11/01	0
5-310	395728	745504	NJ TURNPIKE AU	MAINT 2	1952	40	120- 160	-40	11/14	-48	10/26	-8
5-313	395830	745302	HAINES, WM JR	FARM WELL 2	1967	25	238[1]	-46	11/16	-51	12/29	-5
5-315	395845	745240	HAINES, WM JR	FARM WELL 1	1958	55	200- 238	-39	11/17	-45	11/04	-6
5-438	400218	744604	THE GOLF FARM		1957	41	220- 230	-22	11/07	-23	10/28	-1
5-446	400328	744636	INTERSTATE S-P	INTERSTATE 1	1960	75	220- 245	-14	11/07	-15	10/27	-1
5-707	395343	745501	EVESHAM M U A	EMUA 7	1979	100	405- 441			-86	11/07	
5-728	395819	744341	MOBILE ESTATES	FIELD PUMP	1972	55	485- 500	-31	10/30	-31	10/31	0
5-730	400741	744300	INTERSTATE WAST	MONITOR 9	1978	75	135[1]	5	10/26	4	10/25	-1
5-731	400739	744228	INTERSTATE WAST	MONITOR 8	1978	91	118- 128	2	10/26	2	10/25	0
5-745	400157	744819	BC COUNTRY CLUB	CLUB 1R	1974	102	260- 290	-16[e]	11/14	-17	10/31	-1
5-747	395921	745243	DITTMAR	1949	1949	80	257[1]	-39	11/24	-46	10/31	-7
5-748	395848	745407	USS RANCOCAS	RANCOCAS 1	1959	80	170[1]	-35	11/08	-39	11/08	-4
5-755	395049	745338	KING'S GRANT WC	KGWC 1	1973	90	546- 593			-79	11/04	
5-795	395308	745308	MT LAUREL MUA	MLWC 5	1976	60	416- 463	-79	11/14	-96	11/07	-17
5-820	395049	745334	KING'S GRANT WC	KGWC 2	1973	90	545- 591			-78	11/04	
5-821	400033	745131	FEDERAL LAND BA	1	1983	65	214- 218			-21	11/02	
7- 3	395146	750254	OWENS CORNING	CORNING 1	1956	60	285- 315			-102	11/09	
7- 13	395221	750636	BELLMAWR B W D	BBWD 1	1942	31	111- 160			-46	11/09	
7- 15	394648	745622	BERLIN WATER D	BWD 11	1972	150	675- 745	-78	11/01	-89	11/07	-11
7- 19	394738	745614	BERLIN WATER D	BWD 10	1967	145	645- 713	-75	11/16	-83	02/14[e]	-8
7- 30	395447	750711	SO JRSY PORT CM	MY SHIP 5A	1980	11	87- 104[e]	-22	11/13	-19	11/28	3
7-115	395149	745909	WOODCREST CT CL	CLUB 1	1949	70	400- 420			-84	11/09	
7-117	395229	745712	NJ WATER CO	HUTTON HILL 1	1965	158	552- 562	-76[e]	11/17	-80	12/09	-4
7-120	395237	750031	HUSSMAN REFRIDG	HUSSMAN	1957	67	276- 306	-83	11/12	-90	11/10	-7
7-131	395353	745708	NJ WATER CO	OLD ORCHARD B	1967	71	342[1]	-74	11/08	-79	11/16	-5
7-143	395441	750104	NJ WATER CO	ELLISBURG 16	1957	40	187- 220	-61	11/09	-65	11/16	-4
7-148	395455	745929	NJ WATER CO	KINGSTON 28	1964	44	175- 207	-63	11/08	-66	11/10	-3
7-149	395503	750221	NJ NATIONAL GD	1	1956	15	96- 111	-52	11/15	-54	11/16	-2
7-151	395514	750213	GARDEN STATE RA	RACE TRACK	1944	30	158[1]	-51	11/13	-54	11/09	-3
7-162	395608	750025	NJ WATER CO	COLUMBIA 24	1961	34	112- 167[e]	-46	11/07	-50	11/10	-4
7-193	395256	750633	CRSCENT TRLR PK	1	1952	20	59- 71	-39	11/09	-40	11/14	-1
7-242	394712	750220	SOCIETY DIVINE	SAVIOR	1951	107	492- 512			-76	12/20	
7-244	394715	750419	CAMDEN COUNTY	LAKELAND 3		50	93[1]	-70	11/08	-74	11/02	-4
7-252	394759	750158	GARDEN STATE WC	BLACKWOD DIV 6	1971	75	407- 477	-73	11/09	-84	11/15	-11
7-274	395030	750347	NJ WATER CO	OTTERBROOK 39	1968	60	269- 349	-81	11/08	-87	11/07	-6
7-275	395231	750312	NJ WATER CO	HADDON 20	1958	60[e]	236- 267	-77	11/09	-78	11/07	-1
7-279	395238	750317	NJ WATER CO	HADDON 30	1965	65	224- 275	-76	11/09	-72	11/07	4
7-282	395243	750320	NJ WATER CO	HADDON 11	1945	84	212- 272			-75	11/07	
7-285	395248	750433	NJ WATER CO	EGGBERT 18	1958	24	184- 191	-63	11/09	-64	11/07	-1
7-293	395416	750336	HADDON TWP BD E	HADDON TWP HS1	1966	15	142- 162	-56	11/15	-57	11/10	-1
7-299	395322	750158	HADDONFIELD W D	LAYNE 2	1956	65	206- 246	-80	11/08	-85	11/04	-5
7-310	394928	750024	NJ WATER CO	LAUREL 13	1954	77	394- 456	-76	11/08	-83	11/16	-7
7-311	394928	750027	NJ WATER CO	LAUREL 15	1964	75	395- 473	-80	11/08	-86	11/16	-6
7-316	395134	750230	NJ WATER CO	MAGNOLIA 33	1967	75	271- 348			-87	11/09	
7-318	395135	750246	OWENS CORNING	CORNING 2	1956	67	290- 320			-92	11/09	
7-322	395359	750445	NJ WATER CO	OAKLYN TEST	1961	33	101- 112[e]	-52	11/07	-53	11/07	-1
7-392	394641	745909	PINE HILL MUA	PHMUA 1	1962	150	627- 669	-71	11/07	-88	11/01	-17

REFERENCE NO. 10

Uncontrolled Hazardous Waste Site Ranking System

A Users Manual

(HW-10)

Originally Published in
the July 16, 1982, *Federal Register*

United States
Environmental Protection
Agency

1984

TABLE 2

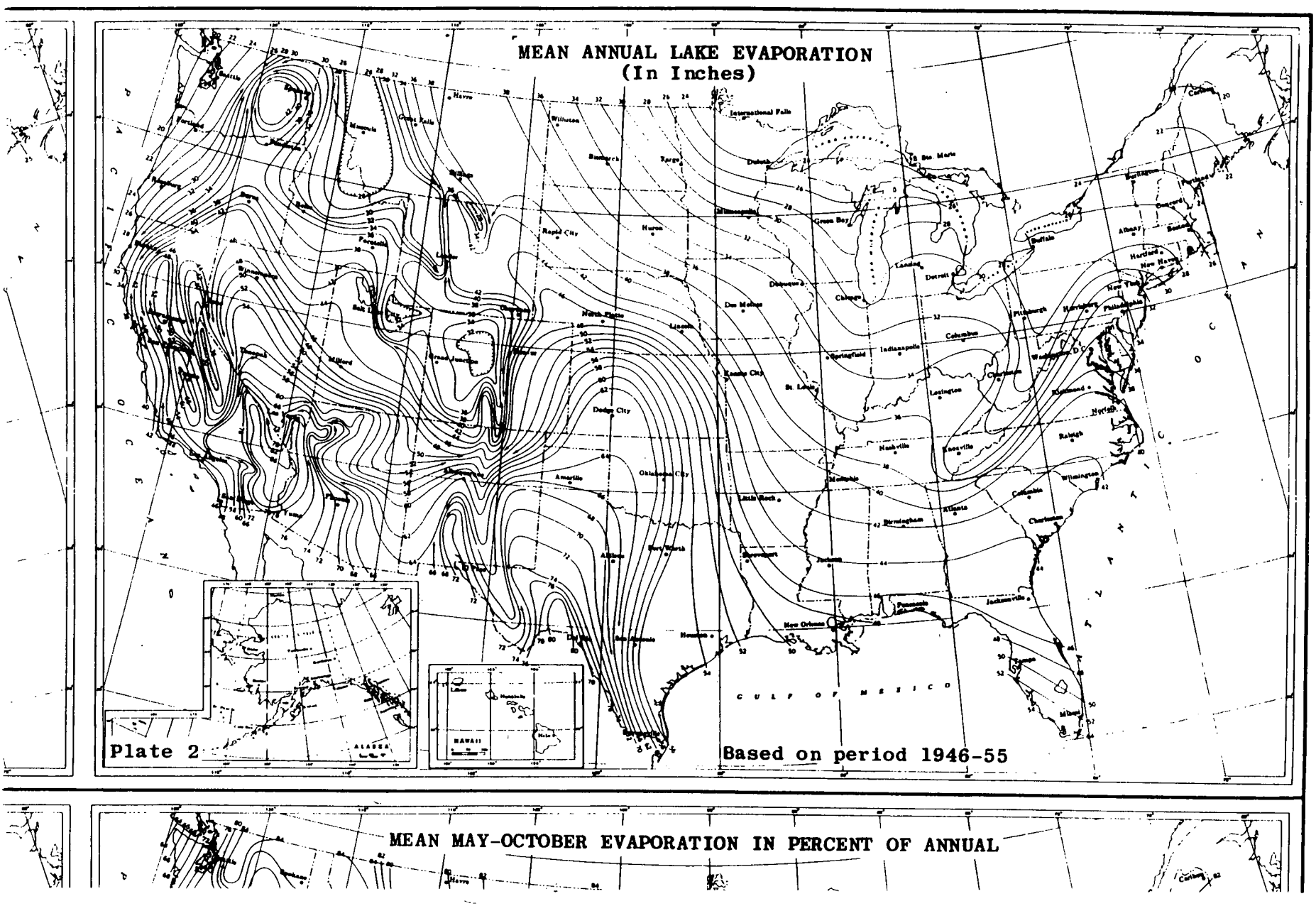
PERMEABILITY OF GEOLOGIC MATERIALS*

Type of Material	Approximate Range of Hydraulic Conductivity	Assigned Value
Clay, compact till, shale; unfractured metamorphic and igneous rocks	$<10^{-7}$ cm/sec	0
Silt, loess, silty clays, silty loams, clay loams; less permeable limestone, dolomites, and sandstone; moderately permeable till	$10^{-5} - 10^{-7}$ cm/sec	1
Fine sand and silty sand; sandy loams; loamy sands; moderately permeable limestone, dolomites, and sandstone (no karst); moderately fractured igneous and metamorphic rocks, some coarse till	$10^{-3} - 10^{-5}$ cm/sec	2
Gravel, sand; highly fractured igneous and metamorphic rocks; permeable basalt and lavas; karst limestone and dolomite	$>10^{-3}$ cm/sec	3

*Derived from:

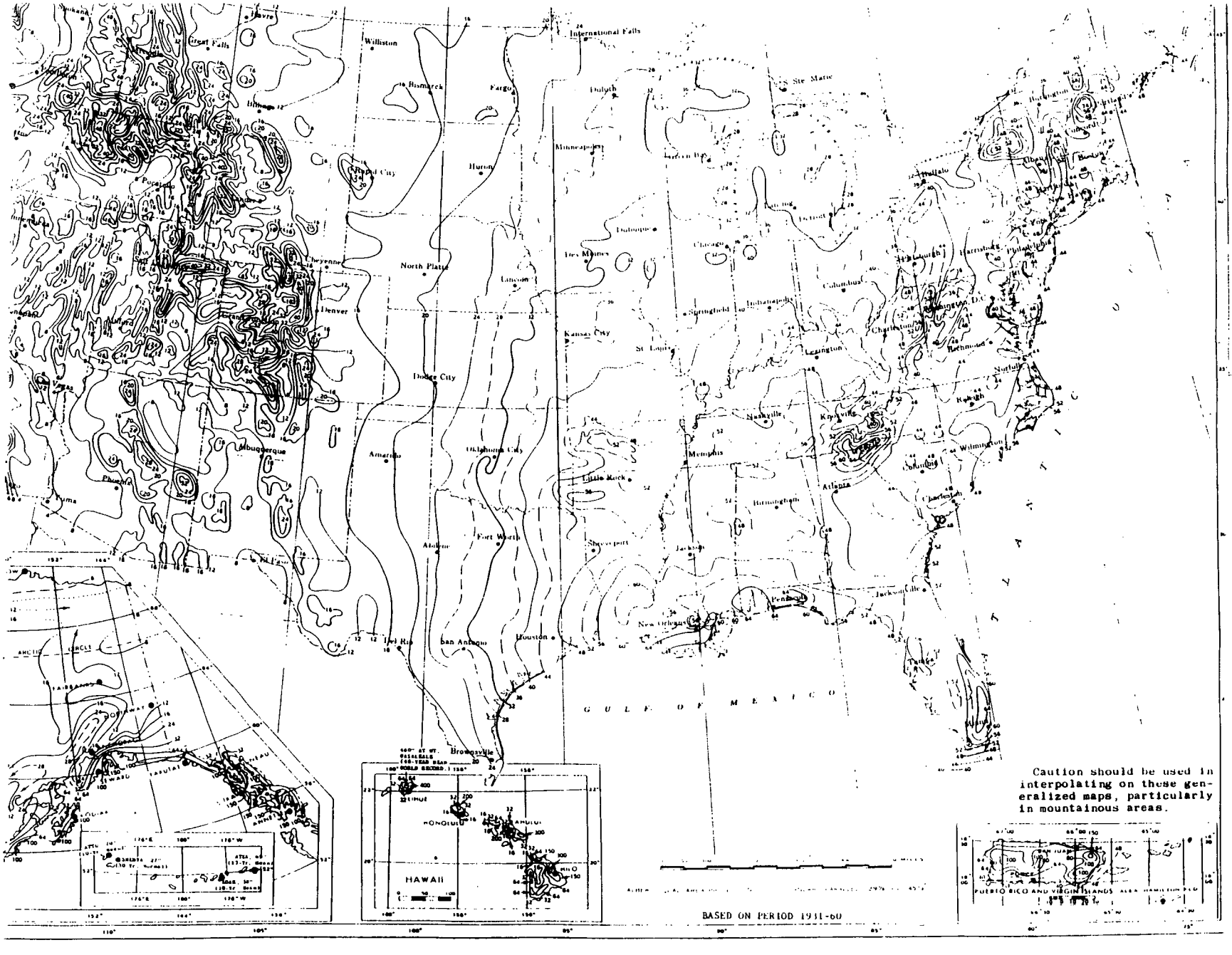
Davis, S. N., Porosity and Permeability of Natural Materials in Flow-Through Porous Media, R.J.M. DeWest ed., Academic Press, New York, 1969

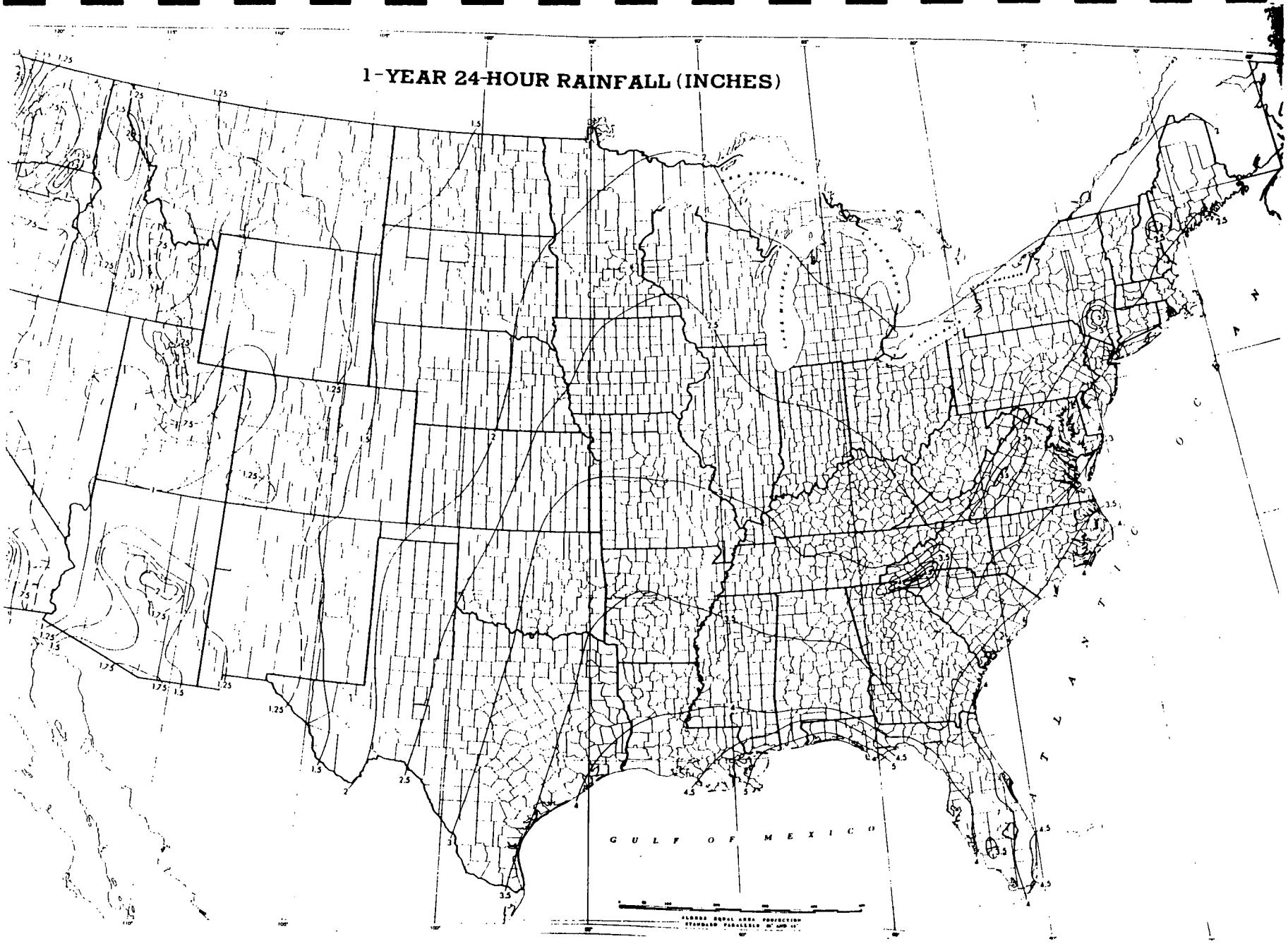
Freeze, R.A. and J.A. Cherry, Groundwater, Prentice-Hall, Inc., New York, 1979


MEAN ANNUAL LAKE EVAPORATION
(In Inches)
Based on period 1946-55
Plate 2
ALASKA
HAWAII
GULF OF MEXICO

MEAN MAY-OCTOBER EVAPORATION IN PERCENT OF ANNUAL

NORMAL ANNUAL TOTAL PRECIPITATION (INCHES)




1-YEAR 24-HOUR RAINFALL (INCHES)
GULF OF MEXICO

REFERENCE NO. 11

CAMPBELL SOUP COMPANY (MARKET STREET)

Lat: 39°56'52"N Long: 75°07'40"W

List of Dataset: NJI6 Number of Records = 6 Group = 1

REC #	POP	HOUSE	DISTANCE	SECTOR
1	452	154	0.400000	1
2	2231	867	0.810000	1
3	14270	4177	1.60000	1
4	92906	37556	3.20000	1
5	260154	101805	4.80000	1
6	279888	96013	6.40000	1

Distance	Population	Houses
1/4	452	154
1/2	2683	1021
1	16,953	5198
2	109,859	42,754
3	370,013	144,559
4	649,901	240,572

REFERENCE NO. 12

NUS CORPORATION — TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-8901-04	2/14/89	10:15 am

DISTRIBUTION: Campbell Soup Company (Market St.)

BETWEEN:	OF:	PHONE:
Art Trenham	ECRA	(609)633-7141

AND: Tammy Marquart (NUS)

DISCUSSION:

Mr. Trenham recalled wastes on-site as lacquer tanks, fuel oil, storage batteries and asbestos. Two 10,000-gallon underground storage tanks were removed. The conditions of the tanks were not known. There are 12 monitoring wells at the site. Oil is known to be in the groundwater (approx. 2-3 ppm). The contamination is possibly from contaminated fill when the area was backfilled. The ~~lacquer~~ lacquer in the storage tanks was used in the enamel can coating process.

Mr. Trenham did not have the file in front of him, but gave me the information he could recall.

Tammy Marquart
2/14/89

ACTION ITEMS:

NUS 067 REVISED 0581

REFERENCE NO. 13

NUS CORPORATION — TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-8901-04	2/14/89	3:30 p.m.

DISTRIBUTION:

Campbell Soup Company (Market St.)

BETWEEN:	OF:	PHONE:
John Rattie	Delaware River Basin Commission	(609) 883-9500

AND:

Tammy Marquart (NUS)

DISCUSSION:

Mr. Rattie said the Delaware River is tidal in the Camden area. In the Camden area the river is a large shipping area. The river is used for recreational boating, but no swimming.

For reference, the Ben Franklin Bridge is located at river mile 100.1 and the Cape is 0. He said the only drinking water intake is by ~~Philadelphia~~ City of Philadelphia at Tarsdale - river mile 110.5. Mr. Rattie mentioned the following industrial intakes: Roman Haas at river mile 106.2 (Phila.), Georgia Pacific at river mile 104.3 (NJ), another industrial intake at river mile 97.8 (NJ), Texaco at River mile 94.0 (NJ), PSE&G of Burlington at river mile 117.2 (NJ) and Stepan Chemical Co. at river mile 127.2 (NJ).

Jenny Marquart 2/14/89

ACTION ITEMS:

NUS 067 REVISED 0681

REFERENCE NO. 14

NUS CORPORATION

TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-5902-02	FEB. 15, 1989	1412

DISTRIBUTION:

GAF Corp File - COR

BETWEEN:	OF:	PHONE:
Mr. John Rattie	Delaware River Basin Commission	(609) 883-9500

AND:

Thomas Varner (NUS)

DISCUSSION:

I asked Mr. Rattie if there were any agricultural intakes along the Delaware River between river mile 90 and 110. He said that their listing showed none. He said the water in that region is not likely to be used for agriculture because of its quality.

TAV 2/15/89

ACTION ITEMS:

NUS 067 REVISED 0581

REFERENCE NO. 15

Surface Water Classifications

Surface Water Quality Standards
N.J.A.C. 7:9-4

Index C-

Surface Water Classifications of the Delaware River Basin

May 1985

State of New Jersey Department of Environmental Protection/Division of Water Resources

2. Primary and secondary contact recreation;

3. Maintenance, migration and propagation of the natural and established biota; and

4. Any other reasonable uses.

7:9-4.13 Designated uses of mainstem Delaware River and Delaware Bay (Summarized From the DRBC "Administrative Manual; Part III; Basin Regulations; Water Quality; Including Amendments Through June 29, 1983")

(a) The designated uses for Zone 1C, 1D, and 1E are:

1. Agricultural, industrial and public water supply after reasonable treatment;

2. Wildlife;

3. Maintenance and propagation of resident gamefish and other aquatic biota;

4. Spawning and nursery habitat for anadromous fish;

5. Passage of anadromous fish;

6. Primary and secondary contact recreation.

(b) The designated uses for Zone 2 are:

1. Agricultural, industrial and public water supply after reasonable treatment;

2. Wildlife;

3. Maintenance and propagation of resident gamefish and other aquatic biota;

4. Passage of anadromous fish;

5. Primary contact recreation from R.M. 133.4 to R.M. 117.81;

6. Secondary contact recreation from R.M. 133.4 to R.M. 108.4; and

7. Navigation.

(c) The designated uses for Zone 3 are:

1. Agricultural, industrial and public water supply after reasonable treatment;

2. Wildlife;

3. Maintenance of resident fish and other aquatic biota;

4. Migration of anadromous fish;

5. Secondary contact recreation; and

6. Navigation.

(d) The designated uses for Zone 4 are:

1. Industrial water supply after reasonable treatment;

2. Wildlife;

3. Maintenance of resident fish and other aquatic biota;

4. Migration of anadromous fish;

5. Secondary contact recreation; and

6. Navigation.

(e) The designated uses for Zone 5 are:

1. Industrial water supply after reasonable treatment;

2. Wildlife;

3. Migration of anadromous fish;

4. Maintenance of resident fish and other aquatic biota;

5. Propagation of resident fish from R.M. 70.0 to R.M. 48.2;

6. Secondary contact recreation;

7. Primary contact recreation from R.M. 59.5 to R.M. 48.2; and

8. Navigation.

(f) The designated uses for Zone 6 are:

1. Industrial water supply after reasonable treatment;

REFERENCE NO. 16

Surface Water Quality Standards

SURFACE WATER QUALITY STANDARDS

N.J.A.C. 7:9-4.1 et seq.

May 1985

New Jersey Department of Environmental Protection/Division of Water Resources

(Allamuchy) - All tributaries to the Pond and to its outlet stream that are located entirely with the boundaries of Allamuchy State Park	FW1
DELAWANNA CREEK (Delaware) - Entire length	FW2-TM
DELAWARE RIVER	
MAIN STEM (Interstate Waters - Classifications from Delaware River Basin Commission (DRBC))	
(State Line) - That portion of DRBC's Zone 1C from the New York-New Jersey state line to the proposed axis of the Tocks Island Dam at River Mile 217.0	Zone 1C
(Tocks Island) - Proposed axis of Tocks Island Dam at River Mile 217.0 to the mouth of the Lehigh River at Easton, Pennsylvania, at River Mile 183.66	Zone 1D
(Easton, Pa.) - Mouth of the Lehigh River at River Mile 183.66, to the head of tide at the Trenton-Morrisville Toll Bridge, Trenton at River Mile 133.4	Zone 1E
(Trenton) - Head of tide at the Trenton-Morrisville Bridge, Trenton, River Mile 133.4 to below the mouth of Pennypack Creek, Pennsylvania at River Mile 108.4	Zone 2
(Philadelphia) - River Mile 108.4 to below the mouth of Big Timber Creek, New Jersey, at River Mile 95.0	Zone 3
(Gloucester) - River Mile 95.0 to the Pennsylvania-Delaware state line at River Mile 78.8	Zone 4
(Marcus Hook) - Pennsylvania-Delaware state line at River Mile 78.8 to Liston Pt., Delaware at River Mile 48.2	Zone 5
(Liston Point) - Delaware Bay from Liston Point, Delaware at River Mile 48.2 to River Mile 0.0 at the intersection of the centerline of the navigation channel and a line between Cape May Light and the tip of Cape Henlopen, Delaware	Zone 6 (C1)
TRIBUTARIES, DELAWARE RIVER	
(Holland) - Entire length	FW2-TP(C1)
(Port Jervis) - Unnamed or unlisted direct tributaries that are north of Big Timber Creek, are outside of the Pinelands Protection and Preservation Areas, and are not mapped as C1 waters by the Department	FW2-NT
(Titusville) - Unnamed tributaries through Washington Crossing State Park	FW2-NT(C1)
(Brooklawn) - Unnamed or unlisted direct tributaries, south of Big Timber Creek and north of Oldman's	FW2-NT/SE2

REFERENCE NO. 17

United States Department of the Interior
FISH AND WILDLIFE SERVICE

P.O. Box 534
705 White Horse Pike
Absecon, New Jersey 08201
(609) 646-9310

February 7, 1989

Ms. Valerie Mathers
NUS Corporation
1090 King Georges Post Road, Suite 100
Edison, New Jersey 08837

Dear Ms. Mathers:

This letter is in response to your January 13, 1989 request to the Fish and Wildlife Service (Service) for information on the presence of federally listed endangered or threatened species within a two-mile radius of 16 potentially hazardous waste sites in Camden County, New Jersey.

This response is provided pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) to ensure the protection of endangered and threatened species and does not address other Service concerns for fish and wildlife resources. If these sites are formally ranked on the National Priority List we recommend that future work plans for the sites be reviewed by the Biological Technical Assistance Group, an interagency technical assistance forum for project managers set up by the U.S. Environmental Protection Agency (Region II). Furthermore, if remedial actions are required at these sites, we recommend that the Environmental Impacts Branch be coordinated with to ensure that all "applicable or relevant and appropriate requirements" (ARARs) are complied with in the implementation of cleanup activities, including the Fish and Wildlife Coordination Act (48 Stat. 401, 16 U.S.C. 661 et seq.), the River and Harbor Act of 1889 (33 U.S.C. 401,403), and the Clean Water Act of 1977 (U.S.C. 1344 et seq.).

Except for occasional transient species, no federally listed or proposed threatened or endangered species are known to occur within a two-mile radius of the following sites:

Aluminum Shapes Inc.
Delair, New Jersey

Borden Chemical Printing Ink
Camden, New Jersey

Campbell Soup Company
(both locations)
Camden, New Jersey

CITGO Petroleum Corp.
Petty's Island, New Jersey

G&W Natural Resources Group
Gloucester City, New Jersey

GAF Corporation
Gloucester City, New Jersey

Georgia Pacific Corp. Gypsum Div.
Delair, New Jersey

Grow Group Inc.
Pennsauken, New Jersey

Clement "Coverall" Co.
Camden, New Jersey

Elco Corp. Varicircuits Div.
Pennsauken, New Jersey

United Steel and Wire Co., Inc.
Pennsauken, New Jersey

Kelbros Inc.
Camden, New Jersey

Kramer Chemicals Inc.
Camden, New Jersey

S W Electronics and Mfr. Corp.
Cherry Hill, New Jersey

If additional information on listed or proposed species becomes available or if a significant time elapses before project activities are undertaken, this determination may be reconsidered.

The Dynasil Corporation of America site, located on Cooper Road in Berlin, New Jersey occurs within a two-mile radius of a known occurrence of swamp pink (Helonias bullata), a threatened species. This occurrence is located in Evesham Township, Burlington County. Without a description of any remedial actions proposed for the site, the Service is unable to assess any impacts, if any, which may occur to this plant species. When such information becomes available, you may wish to contact this office again.

In addition to species of federal concern, species listed by the State of New Jersey may occur within the study areas. To confirm the presence of these species, please contact the following offices:

Mr. Thomas Breden
Natural Heritage Program
Division of Parks and Forestry
CN 404
Trenton, New Jersey 08625
(609/984-0097)

Ms. JoAnn Prier-Murza
Endangered and Nongame Species Program
CN 400
Trenton, New Jersey 08625
(609/292-9101)

Information contained in this letter and additional information obtained from the aforementioned State sources represents the public interest for fish and wildlife resources and should warrant full consideration in the preparation of the Preliminary Assessments. The Service requests that no part of this letter be taken out of context and if reproduced, the letter should appear in its entirety.

A compilation of federally designated endangered and threatened species in New Jersey is enclosed for your information. Please contact Lynn Wilson of my staff should you have any questions or require further assistance.

Sincerely,

Clifford G. Day
Supervisor

Enclosure